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COLMAN'S RURAL WORLD,

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AGRICULTURAL, HORTICULTURAL AND STOCK
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AGRICULTURAL COLLEGES.

ED. RURAL WORLD: In your paper of Janu-
ary 1st, 1867, in an article headed "Agricul-
tural Colleges" is this statement, speaking of
Prof. J. B. Turner. "It may in reality be said
that the origin of the present liberal donations
of lands to the several States for the establish-
ment of agricultural colleges had its birth in his
brain." Now I know you would not knowingly,
do injustice to any one, especially one not living,
and I have undertaken to correct this state-
ment and to tell who was the originator of this
noble work. Having studied agriculture in Eu-
rope, and at an agricultural college in our own
country, I think I know something about them.
The father of agricultural colleges was the late
Dr. Evil Pugh, President of the Pennsylvania
Agricultural College in Centre county, Pa.
Many years ago Dr. Pugh knowing the want of
educated farmers, took it into his head to study
agricultural chemistry and then take ten or
twelve students on his own little farm. At that

time he was a blacksmith and had to study in
his leisure moments. After accumulating some
means he went to Heidelberg and studied there.
His chum was Dr. Colwell who in 1864 resigned
his charge of the Agricultural Department at
Washington, to fill the Professorship of chem-
istry, made vacant by the death of Dr. Pugh.
Dr. Pugh actually walked through Germany to
save the railway fare to educate himself. He
then returned to our country and through his
and the influence of the Pennsylvania Senators
the Act of Congress was passed. After the State
Senate had appropriated the land scrip to the
College, an effort was made by the friends of
Girard and the college at Meadville, to have the
land scrip divided giving one third to each.
Now we all know no student can learn to farm
in a city or town, but must be on a farm. I
hope this State's College and that of Illinois
will not be troubled in that way. The college
building of Pennsylvania alone cost over \$100,-
000, and I think it was \$175,000, and yet it has
gone down so far as agriculture is concerned for
want of means. Yours, W. B. C.

Edgewood, Feb. 10, 1867.

We are much indebted to our correspondent
for his interesting communication. But he has
given no dates. He does not tell us when the
late lamented Dr. Pugh first began to lend his
influence in behalf of the land grant for Agri-
cultural Colleges. That he was one of the most
earnest and zealous friends of industrial educa-
tion no one will dispute. And we are sorry that
his labors met with such poor reward. We regret
that the bright ideal which he had
pictured in his mind, vanished at his approach—
that the great Agricultural College, which he
labored so hard to establish, and from which he
expected so much, was a failure that it literally
starved for the want of means, and that that
noble man died broken-hearted almost in conse-
quence. And this is but the fate of hundreds
of institutions all over the land. They are
literally starving—dying for the want of neces-
sary support.

We think we have the facts to establish the
truth of our former statements, and if our in-
telligent correspondent will give us the dates, we
will prove to his satisfaction, we think, that
Prof. Turner was at least, one of the first to
move in this matter.

THE MEADOWS.

Keep stock from the meadows. In the spring,
the ground is soft, and horses and cattle will
cut it up, and very much injure the crop. Stock
get but little benefit from the meadows in the
spring time, and this benefit is secured at a
great loss in the crop of hay. Well rotted ma-
nure can be profitably spread on the meadows
early in spring—but the earlier the better.
Meadows as a general rule, ought to produce
double the amount of grass they do—thus
making one acre equal to two. Farms of fifty
acres, carefully and skillfully managed, will
produce more than hundred acre farms as com-
monly worked. Farmers should bear this in
mind, and carefully save and apply all their
manure, and no where does it pay better than
in an application to the surface of meadows,
when properly decomposed.

Be sure to have enough meadow land to sup-
ply abundant hay for all your stock. It is a
pleasure to know that you will have all the good
hay that your animals can eat in winter—that
they can be kept in a thriving condition. If
you have not enough meadow, sow clover seed
the present spring. Clover makes good hay and
renovates the land. All kinds of stock will
thrive upon it. It is true you need barns to
store it in—but every farmer should have plenty
of barn room. Money expended in large com-
modious barns is better invested than in bank
stocks. Good barns are always indications of
good farming. They give an air of comfort to
the farm. They show that the products of the
farm are not allowed to go to waste from exposure
to the weather.

They indicate that the poor stock will be shel-
tered from the inclemencies of the seasons, and
have abundance of food to secure their comfort
and thrift.

An Encouraging View.

The most intricate things are but simples,
an aggregate of small things. The whole com-
plication of mathematics is based upon the ten
numera's; a clock upon a few mechanical prin-
ciples, simple as walking or lying down; gravi-
ty does the whole. Simple gravity holds the
orbs in their places; it gets the brooks in mo-
tion; it does a million of things. So, great-
ness is made up of simples, gathered one by one,
advanced step by step; so wealth is acquired.

WEATHER AND CROPS.

March has fully maintained her character so far, and bore out the old saying, "March comes in with an adder's head." The temperature began to fall on the 2d, and continued till Tuesday 5th, when it fell to 15° F., and from two to three inches of snow fell on Wednesday.

Monday gave us heavy sleet, changing in the evening into rain, and covering the trees and everything with a coating of ice, and causing the forests to appear like a "fairy palace," and bending the young oaks, with their heads to the ground.

From an extensive examination of the fruit buds on the peach, we find them *still* in splendid condition.

Some will doubtless be found killed, which is always the case with the mature buds, or those prematurely developed in the fall, but there is as yet nothing to prevent a full crop.

Strawberries look finely, and we see with pleasure wheat and rye looking bright and green, although sown very late, in consequence of the late fall rains.

NOTE.—March 13.—This morning under the influence of a high wind, the temperature fell to 8° in a position not exposed to the direct force of the wind, exciting fears as to the peach buds. March 13.—Thermometer fell to 4° below zero. We fear the fruit buds on the peach are all killed.

[Written for Colman's Rural World.]
The Range of Bees Flight.

This is a subject of great importance to beekeepers, as it has been supposed that bees fly only about three (3) miles when collecting honey, consequently there has been a fear of overstocking an Apiary. Having ascertained that there was no bees on Kelley's Island (Lake Erie) in the Spring of 1866, we established an Apiary of the Italians there for the purpose of rearing pure Italian Queens, and of ascertaining the flight of the Italians for food.

In less than a week after they commenced flying, they were busily at work on the opposite end of the Island, more than five (5) miles distant from the Apiary. This season we shall carry them (in a hunting-box) out on the water, and ascertain how far they can be induced to fly to and from the hives. We are of the opinion however, that they will not go as far across the water as on the land, where there is a continuous supply of flowers to call them off from the hive. We will report further at the close of this season. W. O. FLANDERS & Co.

[Written for Colman's Rural World.]

How to Keep Hams Through Summer.

After your hams have taken salt hang them up and smoke them well, then take them down and dip them in boiling water for a few seconds, that will kill all the eggs of insects, if there should be any on them, then roll them in dry ashes while wet and hang them up again; smoke them more if you choose. I know this to be a good way to keep them, for I have tried it for two or three years; it is cheaper than canvassing, and a great deal better. This will do also for shoulders and sides, also, those that do their bacon in this way, will never have any bugs or skippers on their meat. T. B. B.

THE USE OF SALT.

We observe for several months past the agricultural press has been discussing the use of salt for live stock, and there have been various opinions pro and con. If there was *anything* settled, in the practice of agriculture, by the long and combined experience of 1000 years, and the suggestions of common sense, it is the usefulness of salt as a condiment for man and beast, increasing appetite and promoting health and digestion. When salt is discarded on the dinner table, it may safely be withheld from live stock and not before. In some of the papers the question seems to turn on the propriety of "feeding salt to stock." We never tried this, and do not believe salt alone would sustain life or promote thrift. We keep a lump of rock salt in every horse's and cow's trough, and have it also where stock at pasture can have access to it just as nature prompts. This is giving salt its proper use as a condiment, which it is, an nothing more. If it is given to them at stated times and in stated quantities, no advantage but the contrary may result. It is no disparagement to the genus homo to admit that in parts of his organization, assimilation and digestion of food, &c., he resembles a horse. What would be thought of the practice of administering to a man, on one or two days of the week, a tablespoonful of pure salt to eat as a kind of lunch? —[Rural Advertiser.]

CHEAP PAINT.

Prof. Tillman, at a late meeting of the New York Farmers' Club, said: Some questions having been asked about the best out-door paint, I would recommend as the cheapest and neatest covering for fences and rough work, a mixture of lime paste and skimmed milk. The best preparations would be made by mixing lime with curd, and using milk or whey for diluting the mixture. The reason why this compound will make a more permanent wash than ordinary whitewash is, that the coagulated casein in curd is dissolved in a solution of any alkaline earth, and the compound is not soluble in water. Glue can be mixed with a lime solution; but it will not resist the action of water, and it should not be used on surfaces exposed to rain.

Written for Colman's Rural World.
CITY GARDENS—No. 2.

Much incongruity and want of taste, but more particularly, ignorance, is often displayed, in the planting of city gardens. Large evergreens or deciduous trees, are often planted in places so small, where only the smallest, choicest shrubs, and flowers are admissible; others are left, without grass or shrub or flower, and the rank unsightly weeds, common to the roadside in the country, are allowed to occupy the space; this is extremely slovenly and reprehensible.

Such small plat should be laid out, planted and kept with as much neatness, taste and order, as is displayed in the parlor or drawing-room inside. In very small plats, such as exist only in a few hundred square feet all coarse growing shrubs should be excluded, and only small, neat-habited plants, that flower freely and are handsome in foliage as well as flowers should be used. Of these the rose is one of the handsomest and best; especially the ever-blooming sorts; the hardiest and most vigorous growers, of the China class with dark colors, are eminently suitable for this purpose, being handsome in foliage, as well as unsurpassed in the richness and beauty of their bloom.

These are the gayest, most constant bloomers,

and best of annuals, and bedding flowers, with foliaged plants, should be used mainly, for fine effect in these small gardens.

Besides the above there are a few low-growing evergreen shrubs, and spiral trees which might be admitted into these city plats, with good effect (particularly for winter when flowers are over) and for which these gardens afford a better and more useful place, than the larger gardens of the suburbs or the open country and which would find a much more congenial home and means to display their peculiar charms, in certain situations which might be selected for them in the city.

It is well known that the few broad leaved evergreens we have, and called hardy, turn brown and become ragged and unsightly towards spring, by reason of exposure to the winter sun, on the frosted foliage, so also do the arbor vitæ and cedars turn brown and have a dingy appearance from the same cause.

Now the north or west points of the buildings would be the very place for these, and from the heightened temperature always found in large cities and the absence of the morning sun, these evergreens would retain their dark green foliage and prove quite effective, as well as a great relief to the bare surface and walls during the winter months, and not out of place during summer.

To indicate some plants that would be well adapted for very small places, and the north or west fronts of buildings we would name the *Tree box* a dense, low growing plant, with dark, handsome myrtle-like foliage and pretty green branches, and capable of being sheared into any shape, as globular, oval, cylindrical or any other the fancy might dictate, a hardy, long-lived plant, but which is very apt to have the young growth killed when exposed to the sun in winter.

Another particularly adapted to this position is the *Mahonia agrifolia* or Holly-leaved ash-berry which has large glossy prickly leaves, which invariably brown in winter when exposed, and its flower-buds get killed, neither of which would take place, in the situations above named, besides which it has most beautiful yellow flowers in spring followed by handsome dark berries, and a low spreading compact habit. There are several other species of the evergreen ash-berry, which would doubtless prove hardy and useful in such situations.

Some of the hardiest of that most beautiful tribe of plants, the Hybrid Rhododendrons would doubtless succeed well in such situations, if a little pains was had to secure a peaty soil for them. The magnificence and unsurpassed beauty of their flowers, and the grandeur of their foliage, would at least well repay a trial, and we should be glad to see it made. The English yew, would be well adapted to this position, being of slow growth, could be kept as dwarf as desired, and has very dark foliage and compact habit, capable of shearing into any shape. The American and common English *Holly*, the Japan *Euonymus*, and the *Cotoneasters* would all find congenial homes here, though these last are not as certainly hardy as the first.

The Chinese arbor vitæ (which browns so

badly in winter when exposed) and its varieties, such as the golden and others, might be planted in the centre between two windows and allowed to taper up, would not obstruct the view, while retaining its most lovely shade of green than which no plant has any more delicate and handsome.

And for planting against the brick wall, on the north or west, than the English Ivy, and *Pyracanthus* or "Firey Thorn" nothing could be more suitable.

The Ivy grows rapidly, and clings tenaciously to the brick, with its fleshy rootlets, and covers a wall with a deep dense carpet of green, which is a perfect charm in winter. Where exposed to the sun however, its young growth almost invariably gets killed and may once in a while when not exposed, but even with this I am satisfied its beauty will yield satisfaction to those who give it a good chance to show itself. The Firey Thorn gets very badly used in the open ground, and never exhibits its firey characters, viz: its large clusters of beautiful scarlet berries in winter, which I think it would do trained to a wall in the city.

Then there are certain flowers which display their greatest beauty in a somewhat damp and shaded situation, while others delight in the glare of the hottest sun, to discriminate between these, and place each tree and flower, is the business of the professional gardener, and as it is well or ill done, will his success be. C.S.

Culture of Asparagus.

Asparagus, as well as being the earliest of all out-of-door crops, is one of the most delicious, most productive and valuable. No family or kitchen garden is complete without a good asparagus bed. Add to the above that when once well made and planted, and afterwards properly cared for, it lasts for many years without renewal, and only a little labor or care in cleaning, manuring and forking over annually. Asparagus succeeds on almost any kind of soil, but it should be made deep, rich and mellow, for if not so made before planting the opportunity to do so afterwards is prevented by the perennial nature of the crop.

For farmers and others who have plenty of land, we think the following method of preparing and planting asparagus beds is the simplest and cheapest, and at the same time as thorough and efficient, or nearly so, as by the expensive mode of trenching with a spade.

Select a suitable piece of ground, say with a gentle inclination to the south or east, then take a strong two-horse plow, and a good team, and plow out a furrow, returning back in the same, and repeating the operation, until you get a wide open furrow, and not less than eighteen inches deep, then draw a wagon along side and throw in a liberal quantity of well decomposed strong manure; then take your plow again and throw back the two heavy furrow slices, and in doing so mix and incorporate the manure with the bottom soil of the furrow as much as possible, and keep your plow going round and round in the same furrows, harrowing and plowing again, until you have a space of four or five feet wide deeply and thoroughly

pulverized, a mass or bed of loose rich soil, to be left in a rounded ridge, which may be so made and finished off with a rake if necessary. Of course this row or bed may be of any length desired, or any number of such rows may be run parallel, each ridge containing one row of plants four feet apart, the roots and crowns will spread very much, but the space between may always be worked, mainly with the horse and plow. Now take a one-horse plow and run a furrow down the centre of this ridge, deepening it, and straightening it a little with a line and shovel if necessary, then set a single row of plants in this furrow, eighteen inches apart, spread out the roots to their full length all around, and cover the crowns of the plants about two inches below the surface. In our estimation good one year old plants, is the best age to set out, as at that age the roots are quite long and stout, which with older plants, the roots become so extended that more is broken off in digging, and the plant is not as perfect nor has more roots than at one year old, although the buds may be a little stronger.

All the cultivation needed the first summer will be to keep the beds clear of weeds, and the soil stirred a little at intervals to induce a good growth of top, in the fall where the tops have become dry, they may be cut off and burned on the bed.

A top-dressing of rotted manure may be added, and in the spring following, the row may be plowed up to from both sides, leaving a rounded ridge, with an inch or two more of the soil over the crowns of the plants.

A light cutting may be made this year though but very little should be cut, and none, if the shoots come up weak and spindling till the following year, generally, however, they will bear a light cutting the second year, and a full crop the third, and thence on for twenty or more years.

The routine of asparagus culture consists of an annual dressing in the spring, forking over the crowns and plowing up the sides of the beds, throwing the soil from the alleys over the beds in a rounded form, cutting the annual supply, and keeping out weeds and grass, where the asparagus tops are not thick enough to do it themselves. An occasional good dressing of salt is of great value to this crop. C.S.

PLANT-LICE.

J. W. COLE, Mo.—Dear Sir: What you take for small white worms "about one-eighth inch long" lying in the pith of a very small twig of the Delaware grape-vine, "with small holes, looking as if they were partly grown over, on the outside, by which they entered the cane," are not worms (or larvæ) but eggs. If you recollect, these supposed worms were not divided into many distinct joints or rings by transverse creases, but were smooth from one end to the other like a sausage. By this character you may always distinguish the eggs of insects (many other kinds of which are fully as elongate as those you send) from the larvæ of insects. The eggs in question were deposited in twig for safe keeping last fall by the borer (or ovispositor) of the common tree-cricket (*Ecanthus nicens*), of

which insect you will find a figure in the last number of the *Practical Entomologist*, page 54, and also a notice of its habits; and if you had not meddled with them, they would have hatched out next spring into minute larvæ, only differing from the perfect insect in size and in having no wings!

This answers your first question: What these supposed "worms" really are? As to the second question: How are you to keep them off your vines? My advice is not to make any such attempt, but to allow the insect to breed and multiply as fast as he pleases. He is your friend and not your enemy; for, as you will see from the article already referred to, he feeds upon plant-lice; and I know from many Missouri correspondents, and Mr. Geo. Hushman says the same thing, that plant-lice are rather more abundant than is agreeable on the grape vines of your State.—[*Practical Entomologist*.

A New Hedge Plant.

ED. RURAL WORLD—Dear Sir: Herewith I send you, as a specimen, a small sack of Tor-nillo Seed (for hedging), also a sprig and some pods of the same. What I claim for the Tor-nillo over every other hedge is this: First, That it never grows in a wild state, over twenty feet high, and requires but little pruning. Second. It has but little foliage, consequently shades but a small space of ground. Third. It will stand any drouth as it grows well, when we seldom have rains. Fourth. No animal will approach it. Fifth. It is of quick growth and easily propagated from the seed. Sixth. The pods are extensively used by the Government and citizens for feeding stock and are considered nearly as good as corn.

I would respectfully request that you try this seed yourself, or give it to some practical farmer and inform me of the result of your experiments in your climate.

Very respectfully, H. DE RYTER.

P. S. Cultivate the same as Osage Orange.

F. DE R.

La Mesilla, Donna Ana Co., New Mexico.

AGRICULTURAL COLLEGES.

A review of the condition of the Congressional land grant for the establishment of Agricultural Colleges shows that of fifteen States enumerated, nine, viz: New Hampshire, Vermont, Rhode Island, Connecticut, New York, Pennsylvania, New Jersey, Michigan and Wisconsin, have donated the proceeds of the grant, to existing institutions; three others, viz: Massachusetts, Iowa and Minnesota, have established separate and independent Colleges; and three more, viz: Ohio, Indiana and Missouri, have taken no final action. Pennsylvania and Michigan had Agricultural Colleges in operation when the grant was made, and the proceeds went to increase their endowments. In Massachusetts the fund was divided, two-thirds of the proceeds going to the Agricultural College, and one-third to the "Institution of Technology," in Boston.

A careful examination of all the labor-saving agricultural machines, establishes the fact that the days of hard, life-destroying labor on the farm are about being numbered, and that in rural life there are to be greater opportunities for leisure, for intellectual improvement and practical progress.

ORIGIN OF PRAIRIES.

BY A. FENDLER.

Prairies, ever since they were first traversed by man, have been the subject of speculation as to their origin; and even now at this late day we find eminent geologists arrayed in controversies against each other, in defence of their several theories.

To a person who has always lived in districts where, in order to cultivate the ground, forests have to be first exterminated, it must appear strange to find large natural tracts of country, though covered with a luxuriant herbaceous vegetation, and having all the depth and fertility of soil to support a heavy growth of timber, apparently doomed to everlasting destitution of trees.

Both prairies and forests, when formed on a large scale, present to the friend of nature characteristics peculiarly fascinating.

The prairie, stretching far away to the distant horizon, grants an open view over its green turf decked with waving spikelets of grass and flowers; and by the vast extent of its broad plains incites, like the boundless sea, to feelings of wonder and astonishment.

And what shall we say of the noble forest—where enormous trunks, like so many gigantic pillars, support the green dome of nature's grand temple. Here the busy work of rearing thousands of stately fabrics is silently performed by invisible hands joining fibre to fibre and cell to cell without plumb or trowel. Its gloomy depths and stillness, together with its overwhelming masses of living, working vegetation, are calculated to make man feel as if in the presence of supernatural powers.

For an inquiring mind it is impossible to cross any vast prairies or naked plains without asking himself, whether they have always presented the same uniform features, or whether they have been stripped of forest by some violent action of nature in remote ages, or some slow-acting causes still in operation at the present time.

Let us look for a moment at the theories lately advanced with regard to the origin of prairies.

1. One author holds that the soil of the prairies is of lacustrine formation, produced in vast lakes or rather inland fresh water seas, and that in the silt or "slime" of such a sea all pre-existing seed would be destroyed; and after these lake-bottoms were laid dry, the seeds transported to them from distant regions would be more likely those of herbaceous plants than those of trees.

2. Another author, after careful consideration and criticism of the above theory, tries to prove that in all cases where the ground is naturally naked and without trees, (including the high rolling prairies of the West, and even the glades on the slopes of high mountains,) the land was recovered from the borders of lakes, rivers and seas, by a process similar to that observed at the present time on the borders of Lake Michigan, on the Mississippi river, and in other places.

3. Still another author, having carefully examined both the above theories, and having traveled extensively over various parts of the world, makes "the degree of moisture the most

influential of all causes that tend to determine either the presence of forest or absence of prairies."

Without going into any lengthy discussion let us now see whether the above theories are capable of explaining the origin of the different kinds of prairies, and whether besides the causes therein mentioned, there is no other that may be able to change forests into prairies.

Although generally according to the third theory the prevalence of a moist, rainy climate is connected with a prevalence of forest, and a dry climate with a prevalence of prairies, as found in going westward from the Atlantic coast of the Eastern states toward the base of the Rocky Mountains; this is by no means so in every case. In South America, in one of the most humid mountain districts, where for nine months of the year hardly a day passes without rain; a region enveloped in mist and clouds, drizzling, dripping, or pouring down, we can find surrounded by immense forests, many a large natural meadow or savanna, extending from the base of the mountains to its very crest.

On the other hand, at Santa Fe, New Mexico, where the atmosphere is so exceedingly dry that, with very rare exceptions, dew is unknown, the dry gravelly soil in the immediate neighborhood of vast prairies is for the greater part covered with forests of fir, pine and cedar, not only on the higher mountains, but also on the hills.

As to the second of the above theories, which supposes prairies to be formed of the wide, shallow basins along the shores of lakes and rivers, at first overflowed and underwater, existing as true swamps—afterwards becoming drained and dry—we have no doubt of its correctness as far as most of the low, level prairies in the more northern portion of the United States, along the lake and the Upper Mississippi, are concerned. But it holds not good in a more southern latitude, where we find the low overflowed river bottoms and swamps well timbered; neither in the far West, where we find the narrow strips of timber (occasionally met with) to occur only on the damp soil along the margin of water-courses. As to the high savannas on elevated mountain slopes, this theory fails altogether to account for them.

The first of the above mentioned theories is invalidated by facts found in many portions of the Eastern states, as for instance in the State of New York, where there are large bogs and low flats, having a soil consisting of the minutest silt and yet covered by forests. It may be said, however, that this theory accounts for some vast treeless plains, like the Llanos and Pampas of South America. But even here with striking inapplicable cases in the low plains of the Amazon, which are not treeless but, on the contrary, covered with one vast impenetrable forest (occupying an area of about 120,000 square leagues, that is six times larger than France); and yet these timbered plains must be considered as a mere continuation of the treeless plains of the Llanos and Pampas.

Now it seems to us, that there will be no difficulty to reconcile all these incongruities, if we take into account an agency hitherto strangely

overlooked, or merely noticed by authors to be rejected as insufficient. I mean the powerful agency of fire. Its ravages I consider to be the principal, and by far the most effective cause, in the formation and extension of prairies and savannas, for you may see it at work on low level land, as well as on mountains.

That prairie fires can and do extend the limits of prairies is, or ought to be, familiar to some of our readers, especially to many of the old settlers of Illinois and Missouri, who, some twenty odd years ago, were obliged every fall to destroy the dry grass and weeds around their premises in advance of the regularly recurring autumnal prairie fires, in order to preserve their buildings from conflagration. Fences also had to be watched closely, and pulled down when on fire. Of this the writer can speak from experience. At that time you could see from the streets of St. Louis, every evening in autumn, the glare of many a prairie-fire reflected from the vault of the sky beyond the Mississippi.

[Concluded in our next.]

Influence of Silica on the "Lodging" of Grain.

Years ago it was shown by chemical analyses that the straw of the cereal grasses, and particularly wheat straw, contains a very considerable quantity of silica. Since the plants thus rich in silica are exceedingly hard, stiff and rigid, it was a not unnatural inference that the strength of the wheat plant was likely to be nearly proportional to the amount of silica contained in it. The opinion was, in fact, quite generally received that it is from lack of silica in its stalk that the spear of grain is weak and liable to fall down.

The suggestion has often been thrown out that grain might be prevented from lodging by dressing the soil with some one of the soluble preparations of silica, and so furnishing to the growing plant the supposed desideratum in a readily assimilable condition.

The distinguished French agricultural chemist, Pierri, has recently subjected the whole question to the test of experiment. He finds that the ideas and hypotheses above mentioned are not borne out by facts. As the result of numerous analyses, he finds that of the different parts of the wheat plant the leaves contain far more silica than the smooth portion of the stalk, and the stalk much more than the knots or joints, which prove to be comparatively poor in silica, in spite of their apparent hardness. In equal weights, the leaves contain seven or eight times as much silica as the joints, and four or five times more than the spaces between the joints. The portion of the plant least rich in silica is the lower part of the stalk, at precisely the place where the stiffness and rigidity are most necessary. If, then, silicated manures be offered to the wheat plant, the larger portion of the assimilated silica will accumulate in the leaves and not in the stalk; and, as a consequence of this excessive development of the leaves, it follows naturally that grain highly charged with silica, might fall down and lodge, while grain exposed to similar conditions, but less rich in silica, might stand firm and suffer no harm.

It has long been noticed that, other things being equal, those samples of grain of which the leaves are most highly developed lodge first. This is not surprising, for in this case the foot of the stalk remains shaded, and, as a consequence, soft and feeble, while the enervated stalk is forced to carry an excessive load, which presents a great surface to the crushing pressure of rain and wind. On the other hand, it is notorious that the wheat grown, upon poor land rarely lodges, and the explanation of this fact

is evidently that, in the absence of vigorous leaves, the stalks, besides having no great load to carry, becomes hardened by the action of sun and air.

The practical lesson suggested by these experiments is that, in order to prevent the lodging of grain, the farmer must, for the present at least, look rather to improved methods of sowing, by means of which light and air shall always be freely admitted to the stalks, than to any chemical specific which has yet been suggested. In the course of time means may perhaps be found to induce the deposition of strengthening ingredients at those parts of the stalk where strength is most needed, but until that time arrives it will be best to follow the lesson taught by the natural growth of the wheat plant, and not to depart too far from the physical conditions which are essential to its healthy development.—[*The Nation*.]

ST. LOUIS TROTTERS.

The *Missouri Republican* of the 5th inst., contains the following:

The *Turf, Field and Farm* of the 2d inst., contains a letter from "K." about St. Louis trotters, which speaks in very just terms of Mr. Colman's "Puss." We are glad to see in this instance more of discriminating and intelligent judgment displayed than was exhibited by the same writer last fall in eulogizing a pair of bays most extravagantly, which were displayed in the arena at the Fair in September:

St. Louis, Feb. 21, 1867.

EDS. *TURF, FIELD AND FARM*—In the issue of your excellent journal for Feb. 16th, I saw a notice of a great many of our St. Louis trotters, and was much interested in the catalogue, though many were not mentioned. Among those favorably noticed was the trotting mare Puss, owned by Col. N. J. Colman, of this city. Remembering the wonderful performance of this mare at the late St. Louis Fair, I concluded to pay her a visit yesterday, and found her looking remarkably well. She has evidently been well wintered, and will, doubtless, show astonishing speed the coming season. Col. Colman was not at home, being a member of the Legislature, which is now in session at Jefferson City. He has a fine residence about five miles west of the city and near the Mound City Track, and is editor of the *Rural World*. As your readers are fond of descriptions of celebrities in the horse line, and, probably, are not familiar with the performances of this wonderful young mare, I will rehearse them; but first let me give a description of her: She was five years old last Spring; is a dark iron grey, of remarkable length of body as well as of neck, 15 hands 3 inches high, splendidly quartered, very broad and powerful over the loin; haunches remarkably large and extending well down to the hock, from which, doubtless, she gets much of her great power. Her symmetry is faultless, and her style throughout admirable. Her sire was Pilot, Jr., and her dam, it is said, largely of the Messenger strain. And now as to her speed: Col. Colman exhibited her at the St. Louis Fair, and it was noticed in the exhibition ring that nothing could pass her. It was supposed, however, that it was because the ring was better adapted to her gait than it was to some of the other horses. On the 7th day of the exhibition a premium of \$400 was offered for the fastest five year old, the trial to be had on the outside ring, and the horses to go separately, judges and timing judges being carefully appointed. The outside track is nearly seven-eighths of a mile in length. Puss was brought out and driven by her owner, who had not pulled a rein on her during the Fair, nor for ten days previous, and she trotted fairly and squarely around the track, without a skip, in two minutes and four seconds. Pilot Temple, who trotted for a purse on the same track during the Fair, and who has trotted in 2:27 on a full mile track,

could not beat, and did not beat, two minutes and six seconds, and lost the purse. Tackey, who has beat Pilot Temple, but who, we believe, has not trotted better than 2:27 in public, trotted on the same day, on the track, for a purse of \$800, and did not mark lower than two minutes and six seconds. Dixie, who has hauled a wagon under 2:32, likewise trotted the same day, but did not mark lower than 2:06—though her owner thinks her faster than Tackey. Doc. Carr owns both of these remarkable mares, and we incline to think that on the superior tracks in New York city, either of them could give all that any of the fast ones in the metropolis would want.

The five year old mare, Puss, marked down two seconds lower than any of the other fast ones, and her owner said he verily believed that if he had thought it necessary she could have trotted under two minutes. Immediately after this performance, Mr. Grant, the owner of Pilot Temple, offered six thousand dollars for her—but her owner refused it.

This mare has the easiest way of going I ever saw in a horse. She keeps her feet well under her body—no over-reaching or straining. She trots close to the ground, and her step is quick; easy, elastic, and made with no apparent effort. If no calamity befalls her, it is predicted by the best judges that she will make the fastest time of any mare or gelding on the continent. She is sound as a nut—not a blemish or imperfection about her. Col. Colman has a great number of promising young trotters, and is turning his attention to breeding trotters. He has a large number of trotting mares stunted to his trotting stallion, Abdallah, Jr., who is sired by R. A. Alexander's Abdallah. He by Rysdyk's celebrated Hambletonian, and out of a thoroughbred mare. We think our breeders of horses will do well to consider if it will not prove profitable to breed more trotters, instead of so many running horses. Trotters at all rates of speed, are always in demand, while, with the race horse, only the very fastest will command high prices. Fearing that I have already consumed too much of your valuable space, I will close.

K.

BREEDING TROTTERS.

The representative trotting stallions of the East and the West—Rysdyk's Hambletonian and Alexander's Edwin Forrest—are closely inbred. Hambletonian's sire is a grandson of imported Messenger, and his dam is a granddaughter of the same horse, while his second dam, Old One Eye, is the produce of half-brother and sister.

Being thus closely inbred, it is no longer wonderful that his intensified nature not only stamps upon his colts his own color, marks and size, but almost uniformly that same long, low, slashing stride that enabled Dexter with tremendous pace to sweep over the mile course in two minutes and eighteen seconds.

Having, therefore, determined upon an inbred stallion of fine trotting action and developed speed, the other branch of our subject leads us to inquire, "What description of mares should be selected for him?" Most breeders would follow the ordinary practice of filling his harem with mares of trotting performances, on the theory that "like begets like." But the foregoing conclusion that the stallion and not the dam gives the outward form to the foal; and the internal nervous organization, like its nourishment, comes from the dam, leads us to a different selection—because the trotting action of the dam is of not so much importance as the purity and quality of her blood. If she is a thoroughbred, then she will impart to the foal the most desirable internal qualities for speed and endurance that can be obtained; and exactly in proportion to her breeding should the performances of her colts prove in fleetness and their capacity to repeat.

Mambrino Chief furnishes an illustration in point. Though well bred himself, his produce,

even when aged, in New York, out of trotting-mares without pedigrees, showing a dash of blood rarely surpassed—two minutes and forty seconds. But for finely-bred mares in Kentucky he produced an Ericsson, a Kentucky Chief, a Brignoli, a Bald Chief, and others that, in their three-year-old forms, astounded the breeders of trotters by trotting handsomely past the mile goal, without the least distress, before the swiftly gliding second hand had marked two minutes and thirty-five seconds on the dial.

Occasionally their performances are equaled by the produce of trotting dams of inferior breeding—such as Cora and Norma—but they rarely, if ever, are able to repeat. On the contrary, the present cross of three-year-olds at Woodburn—such as the Mambrino colt out of the Woodburn mare or the Bald Chief colt out of Craig's Whalebone mare, or the Pilot, Jr. colt out of the famous Black Rose—simply because they sprung from such finely-bred mares, can repeat their performances whenever called upon. The dam of neither one has any trotting-action; yet one of these wonderful colts trotted last Fall in the mud, at Louisville, with a stand-still start, in the surprising time of two minutes and forty seconds; and in their exercise, all of them so stoutly contest the victory that they come swiftly over the homestretch neck-and-neck together. It still further proof of the propriety of our selection of brood-mares be demanded, we need only refer to the pedigree of Lady Thorne, or to that of the majority of the fine trotting stallions whose seasons are advertised in your journal.—[*Wilkes' Spirit*.]

Rysdyk's Hambletonian Stock.

The general attention which is being given to the improvement of the breed of roadsters is now greater than we have known before; the different classes of stock are frequently canvassed by our horse fanciers as well as by our farmers, and we are often asked the question as to which is the best. In answer, we can only say it would be quite difficult to determine. In our columns will be found a number of advertisements of stock horses, and there is not one of them, with a well selected mare, but what will bring a valuable colt. At present the most fashionable is the Hambletonian. Of this breed of horses, in reply to the inquiry of a gentleman of the West, we would say that the Rysdyk horse is regarded as the king stallion of trotting horses, although Ethan Allen is, probably, the sire of as fast a horse as any in the country, if the statements of the speed of the Pocahontas mare can be relied upon. But there is no doubt but that the Rysdyk horse is the parent of more fast trotters than any other in the States. George Wilkes has gone to a wagon in 2:25, and that, too, in a third heat; and Dexter made his mile under saddle, at Buffalo, last summer, in 2:18, evidently with a little more speed left in him if it had been required. He also beat Gen. Butler over the Fashion Course, in harness, making the fifth heat in 2:24. Shark, Volunteer and Bruno, as well as the "Bingham horse," are of this stock. Bruno has trotted the fastest mile, for a four year old, on record. The Rysdyk Hambletonian is a blood bay, with white hind feet and ankles, and a small star in his forehead. He was sired by Abdallah, and he by Membrino. He is now in his nineteenth year, and has, probably, netted for his owner \$150,000. When five weeks old he was purchased, with his dam, by Mr. Rysdyk for one hundred and twenty-five dollars, and at three years old he was driven round the Union Course in 2:48. He was early used for breeding purposes, and when only two years old he produced two colts which since have trotted their mile in 2:30. The old horse's term of service, this season, is \$500.—[*Turf, Field and Farm*.]

See Sam. J. Eastman's advertisement of Brazilian Sweet Potato.

BEECHER ON FAST HORSES.

If a horse has had swiftness put into him, it is fair to give him a chance; be sure that you have let go of him, and then with a squeal he lets fly his heels in the air, till the sun flashes from his polished shoes, then off he goes faster, fiercer, clear across the lot, till the fence brings him up. And then his eye flashing, his mane lifted and swelling, his tail up like a king's sceptre, he snorts a defiance to you from afar; and with series of rearings, running sideways, pawings and plungings, friskings and whirls, he starts again, with immense enjoyment, into another round of running. Do you not see that it is more than fun? It is ecstasy. It is horse rapture!

I never see such a spectacle that I am not painfully impressed with the inhumanity of not letting horses run. Fastness is a virtue. Our mistaken moderation is depriving him of it. I drive fast on principle. I do it for the sake of being at one with nature. To drive slow, only and always, is to treat a horse as if he were an ox. You may be slow, if you think proper. But your horse should be kept up to nature. He would have had but two legs, if it was meant that he should go only at a "go-to-meeting" pace. He has four legs. Of course he ought to do a good deal with them.—[Henry Ward Beecher.

Contagiousness of Glanders.

Regarding the contagiousness of glanders, Mr. Percival submits the following deductions as the result of facts gleaned from his own experience:

1. That farcy and glanders, which constitute the same disease, and propagated through the medium of stabling, and this we believe to be the more usual way in which the disease is communicated from horse to horse.
2. That infected stabling may harbor and retain the infection for months and even years; and although by thoroughly cleansing and making use of disinfecting means, the contagion might be destroyed, yet it would not be wise to occupy such stables immediately after such supposed or alleged disinfection.
3. That the virus, or poison of glanders, may lie for months in a state of incubation in the horses' constitution before the disease breaks out. Of this we have had the most positive evidence.
4. That when a stable of horses becomes contaminated, the disease often makes fearful ravages among them before it quits; and it is only after a period of several months' exemption from all disease of the kind that a clean bill of health can be rendered.

Profits of Vermont Sheep Husbandry.

A correspondent of the *Springfield Union*, writing from Cornwall, Vt., says:

Henry F. Dean has a 300 acre farm, and 140 Spanish Merino sheep, valued at \$40,000. Rollin J. Jones has a farm of 600 acres. His flock is 125, valued at \$40,000. F. H. Dean, 350 acres; 150 breeding ewes, valued at \$500 each, \$75,000! Don't doubt it, for he has been offered \$1000 each for five of them and \$7000 last year for a four year old buck, which has since earned him \$4000. California gold mines can't compare with that. Merrill Brigham, 400 acres; flock, 300 thorough-breeds, valued at \$51,000. Simon S. Rockwell has a flock of 300, valued at \$30,000 in the last four years. Joel Randall 500 acres, and 250 "the best blood-blooded sheep," value not stated. He sold a two year old buck recently for \$3000. These men think it most profitable to stick to Vermont themselves, and let their sheep migrate to the West, to the South, to California, and to every other country that can raise gold enough to pay for the sheep. These are the wise men of Cornwall.

Shoeing on Contracted Feet.

In old and bad cases of contraction, not only the hoof and frog, but the internal parts of the foot, including even the bones, are diminished in size. Now, it does not seem possible that forcing apart the heels by mechanical means, can ever cause the bones to grow large again, although it may relieve the pain and lameness, by taking away the pressure of the horn upon the internal parts. The same result can be obtained and recent cases of contraction cured by any skillful shoeing-smith.

For about one-third of the length from the end of each heel towards the toe, let the surface upon which the wall of the hoof rests, be leveled so as to slant gently outwards. Let there not be more than five, or at most six nails in each shoe, and of these only two on the inside, the last of them about two-thirds from the end of the inner heel.

When shod in this manner, which I tried with the greatest success ten years ago, the horse's heels have a tendency to slide apart at every step, and in a few weeks or months, according to the case the hoof opens gradually to its natural size. But this can only be accomplished with certainty while the contraction is confined to the hoof, and before the internal parts are much affected.

The most common way in which shoes cause contraction is by their being made with the bearing surface of the heels sloping inwards, which make the horse's heels slide towards the frog, and squeezes them together.

Another cause is the nails being brought out and clinched too high upon the wall of the hoof; for the higher they are driven up, the nearer they go towards the internal sensitive parts. Pressure upon these parts causes so much pain that the feet become hot and feverish, and the hoof dry, brittle and shrunken.—[*Cor. Wilkes' Spirit.*

DIET OF HORSES.—The late Principal of the Veterinary College in Edinburgh, Prof. Dick, stated that 12 lbs. of hay and 5 lbs. of oats form sufficient daily food for a horse doing no work, but he considers that a working horse should have 14 lbs. hay, 12 lbs. oats, and 2 lbs. beans. The chemical value of the feed is expressed as follows:

Horse at rest	-	-	29.2 oz. flesh-formers.
Horse at work	-	-	56.2 oz. flesh-formers.
Difference for work	-	-	27 oz. flesh-formers.

What say our patrons and readers who are experienced horse feeders, to the foregoing statements?

SHARP SHOD.—It is economy to keep horses sharp shod. They not only do more work, but require less food. If sharp, a horse works easy and fearless. If smooth, he endangers himself and rider or driver, and works in fear and with greater exertion of muscle. Consequently, he needs more food to supply the waste. It is not good economy to keep a smooth shod horse in icy weather. By changing the nails of the shoes every week, they can be kept "rough-shod" without steel corks.

MANAGEMENT OF COWS.

The great object in keeping cows, is the milk they produce. To get the greatest yield from the dairy, is, or should be the question to be studied by all dairymen. The following questions would naturally suggest themselves:

- 1st. How many cows would a given farm keep, summer and winter?
- 2d. How long should they go dry?
- 3d. What kind of food is the best adapted to produce the most and nicest milk?
- 4th. How to obtain the best milkers?

With regard to the first query. Farmers' barns are generally overstocked; this is a great fault. From my own observation I should say that nine-tenths of dairymen have more cows than they can keep well. There will, perhaps,

be abundance of pasturage during the fore part of the season, but when the dry hot weather of July and August comes, the pastures become short; the cow has to work hard to dig her food from the crispy turf, and has but little time to ruminate in the cool shade; as a consequence the milk dries up, and the owner wonders why his cows do not yield as much milk as neighbor A's.

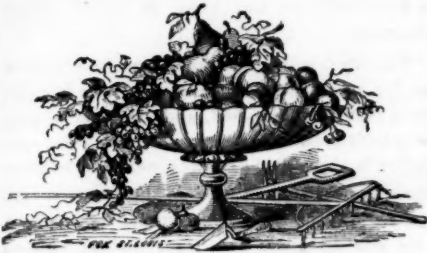
Bear in mind that the cow's stomach is the laboratory that converts her food into milk after appropriating enough for the support of the system; if the food is not of a proper kind or of sufficient amount, the lacteal fluid will be meagre. It is hard to obtain something from nothing. As well might a miller seek flour from his mill without putting wheat into the hoppers. Give and it shall be given to you again! Give abundantly of the best kind of food, and you will have little reason to complain.

There is nothing better to produce milk than abundance of fresh sweet grass, but this we cannot have at all seasons of the year. When this fails from drought or the autumnal frosts, resort should be had to soiling and messing. It is doubtful whether soiling through the summer months would be here more profitable, taking into account the high price of labor and the comparative cheapness of land; (by soiling is understood keeping stock up in yards or barns, and taking their food to them green,) but when the grass fails apply a proper substitute and the flow of milk may be continued. I have for several years raised corn for the fodder (sowed in drills one and a half bushels per acre,) which I think the cheapest and best substitute for grass that we can obtain. If the feed begins to fail by the 1st of September, then throw out the green succulent stalks of the corn; one square rod will feed quite a herd of cattle. It is difficult to determine how much pasturage to allow for a cow. In England, on land highly manured with bone dust, one acre will pasture a cow; without the manure it takes two acres. In this country the poorest land is generally turned out to pasture, frequently not soddled, and much is worm eaten; three acres of it little enough. For winter two tons of hay or its equivalent in other kinds of seed and a good supply of grain besides.

With regard to the second query: How long should they go dry? I take exceptions to the almost universal practice on the Western Reserve. Cows are milked till about the time winter sets in, then go dry till the next season. Thus we have four or five months out of twelve, and the dairy yields nothing, and the expense of wintering deducted from the proceeds of the summer leaves not a very great balance for profits. The idea is quite prevalent that cows will be better the next season if not milked later than the middle of November. I claim that after the 1st of November, cows can be made to pay their way for wintering, that three or four weeks is long enough for them to go dry, at least that is the practice of some of the best dairymen of New York. To begin with a heifer and keep up a good supply of milk through most of the winter is not difficult if the two following conditions are complied with, but with a cow that has been habituated to go dry early it is not so easy a matter:

1st. Abundance of the best of hay and corn fodder, then messed with corn and oatmeal ground together, or rye and oats, or bean meal, which is highly recommended from two to four quarts per diem.

2d. Equally important is shelter, a good stable, warm, well ventilated, well bedded with straw. They should be kept out of all storms, and when very cold be permitted to go out only an hour or two for exercise and drink. If these conditions are followed out there will be no occasion to grumble at the small amount of milk, and it will not only pay for the extra feed, but will pay for all the feed and labor besides.—[*Ohio Farmer.*



HORTICULTURAL.

THE FRUIT GARDEN.

The fruit garden is just as indispensable an accompaniment of the farmer's home as the vegetable garden. Vegetables furnish cheap and healthful food, and the kitchen garden produces them, and every farmer has such a garden. But ripe fruit can, not only be produced as cheap, but is really much healthier than vegetables. Ripe fruit will ward off disease and prevent painful sickness. God has, doubtless, given it to us for this purpose. The acid contained in the fruit acts upon the liver, separates the bile from the blood—and thus prevents those bilious complaints to which we are so subject in this climate. This is an undisputed fact. All qualified physicians will tell you this. Should not fruit then be grown and eaten by all? Should not the wife and children and all hands have all they want? Should not their health be respected, their happiness consulted?

Make your garden double the size it is and devote one half of it to fruit. Plant out this spring a couple hundred strawberry plants in rows three feet apart and one and a half apart in the row. Keep the weeds hoed out as you do from your vegetables, and another year all hands can enjoy all the strawberries they can eat.

Get one hundred raspberries and plant them out likewise. Set them out in rows five or six feet apart and a couple feet in the row and hereafter you will have plenty of raspberries for the family.

Obtain fifty plants of the Houghton seedling gooseberries and fifty currants, and set them out in rows about five feet apart each way, and you will then have plenty of gooseberries and currants for the family.

Then you want fifty plants of the Lawton blackberry to set out, and thus you will run through the season of small fruits and obtain health and enjoyment for all.

But you should not stop here. By all means plant a few grape vines—the Concord is the best. Set them out by the side of the house or the garden fence—anywhere so as to get them out, and after one year's growth they will thrive and take care of themselves, and annually thereafter, your life long, you can partake of their luscious clusters.

Then there are cherries and plums and peaches and pears and quinces and apples, which should be planted in the orchard—which should not be far from the house. How much home enjoyment, how much healthful, nutritious food, all these fruits would afford. How much more attractive would they make home. How they

would delight the dear children, and delight you—and your friends when they called to visit you. For what do we live? Is it merely to hoard up the world's goods, or is it for happiness, contentment and real enjoyment.

Then we should also surround our homes with flowers, evergreens, shade trees, and everything to make it attractive. Friends, enter into this matter in earnest the present spring.

Hardy Varieties of the Apple.

ED. RURAL WORLD: We are greatly troubled by losing apple trees by winter-killing in this county—particularly when planted in bottoms, or on the prairies. This is one of the north-west counties of the State, and our winters are generally pretty severe. Can you give me a list of varieties that will not winter-kill. W. Atchison county, Mo.

REPLY.—Cultivation has something to do in the winter-killing of apple trees. If they are planted in a rich soil, and that soil is kept cultivated till late in the season, the wood growth is prolonged—the wood does not ripen and consequently falls an easy prey to the intense frosts of winter. To remedy this, give the orchard soil no cultivation after the first of June, so as to check wood growth, and let it ripen thoroughly. Root pruning in July would have the same effect, but is too laborious. Putting the orchard in grass or clover as soon as the trees are well established, is another good course to prevent too great and too late a growth of wood. But sometimes we have much warm and wet weather in the fall, and trees will grow in spite of ourselves, and it is after such weather that the injury by winter-killing is greatest. There is much difference in the hardiness of varieties, and in very cold climates, or where there are great extremes of cold, it is wise to plant these kinds. They are generally the slower growing varieties. The wood is generally tougher, firmer, denser and shorter jointed. We will name a few varieties that you can plant with perfect safety in Atchison county. For summer apples the Red June, the Red Astracan, the Sweet June and Keswick Codlin can safely be planted. For winter apples we can recommend the Ben Davis or New York Pippin, the Willow Twig, the Swaar, the Jeneton and Winesap. We presume this list could be considerably extended—but it embraces some of our best hardy varieties.

When to Plant Evergreens.

ED. RURAL WORLD: I wish to plant quite a large number of evergreens in my front yard this spring, and would be glad to have you tell me through the *World*, the best time to transplant them, and the best varieties for this climate. T. P., St. Charles county, Mo.

ANSWER.—Evergreens can be transplanted with perfect safety during any of the spring months—but probably April is the best month for the purpose. Many think that transplanting evergreens is a perilous undertaking, but it can be done as safely as with any of the deciduous trees. The only difficulty is to prevent the roots becoming dry. If packed for a long distance, there must be plenty of moist material about the roots—to prevent them from becoming dry. The sap is resinous, and if it once dries up it will not again flow. Better throw

away the trees then, than to plant them. The cause of so much suspicion about evergreens not living, after being transplanted is, that they have come from Eastern Nurseries—the roots have been improperly packed, for the long distance, and, when planted they fail in consequence. Because they have not lived, many think that others will not live, but if obtained from home nurseries, and properly planted, not one in a hundred ought to fail. If our readers will try them, they will be satisfied they will bear transplanting, as well as any other trees. And then how pleasant and cheerful they make our residences appear; how much they ornament our grounds, and enhance the beauty and value of our homes. The most rapid growing and hardy kinds are the Scotch Pine, the White Pine, the Norway Spruce, Balsam Fir and American Arbor Vitae.

PEACH CULTURE.

In all cases, peach trees should be planted when of one season's growth. The time of planting, whether fall or spring, is immaterial. In very severe climates, the spring would be preferable; but in all the peach-growing belt of the United States, the choice between fall and spring planting is of little account. For orchard planting the ground should be marked out in furrows, about eighteen or twenty feet apart, and the trees planted to about the same depth as they stood in the nursery. The side limbs and tops should be cut off, leaving a straight stem of the desired height for forming a head. If the trees are planted in the fall, this trimming and topping should be deferred till spring. Low heads are desirable. When the heads begin to form proper care should be taken to prune out all unnecessary limbs, leaving three or four limbs in proper position to form the future tree. Shortening in about one-half the growth for the second and third years after planting, and keeping the inside of the trees clear of useless growth, is all that is required in the way of pruning before the trees commence bearing. The borers, which enter the body of the tree at or a little below the ground, should be removed from year to year. Many remedies for their prevention have been recommended, but experience has demonstrated that the best preventive is personal inspection of each tree, and removing with a knife, or other suitable instrument, the borers. Peach trees will succeed in any soil that will grow corn or potatoes, and require about the same cultivation as those crops. No manures are required until the trees have borne their first crop. After the first crop one hundred bushels of wood-ashes, or three hundred pounds of Peruvian guano, or four hundred pounds of some standard super-phosphate, or four hundred pounds of bone-dust, to the acre, will restore the trees and prepare them for the next year.—Isaac Pullen, in *Agricultural Report*.

TYING UP VINES.—It is a mooted question among vine growers, whether it is better to tie up to stakes or trellis grape vines the first season after setting, or to allow them to ramble on the ground. A writer in the *Gardeners' Monthly* says: "One thing often sadly neglected, that is of vital importance to the health of the vineyard and the future success of the plants, is the tying up of the vines the first year. One year's neglect will cost two years to correct. Strong vines should grow six to ten feet the first year; and if the laterals are kept pinched back, and the vines tied up, they will ripen their wood and roots and the next year should yield one-third crop."

[Written for Colman's Rural World.]
**ON THE CULTURE OF THE
 GRAPE VINE.—No. 5.**

BY DR. LOUIS L. KOCH, GOLCONDA, ILL.

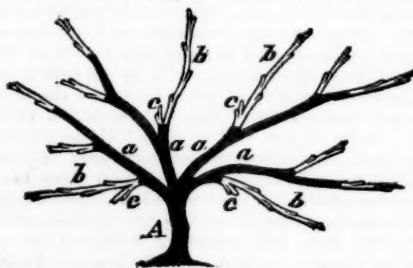
TREATMENT SIXTH YEAR.



Sixth Spring.—Of the latter branches of the preceding year, located on the outside and bearing each three buds, the middle one is to be broken off, just as you did in the past year. Hence but sixteen buds remain upon the young vine on all its young branches, produced during the last year, and which are necessary to the further development of the sixth year. Subject to a natural law, each of those buds bears two bunches (some perhaps three) so that the tribute rendered to the pains already spent is thirty-two bunches; each being one-fourth pound as previously accepted, makes in all eight pound of grapes. Hereafter this yield is known to increase in much greater progression unto the completion of the designed form.

The same simple, though careful, attention to the young summer branches is still requisite, and the first departure therefrom is observed in the now ensuing fall.

Sixth Fall and Seventh Spring.—At the trimming of the sixth fall, the summer branches next to the trunk or stock and cut back to two buds, will now be again reduced, the one to four



as the first future fruit branch (*b*), and the other to one bud as the first future tendon (*c*). The four summer branches of every lateral, and attached next to the stock, as well as those near its ends, are cut back to two buds.

TREATMENT SEVENTH YEAR.

With the seventh year we perceive the vine presenting the stock (*A*), four laterals (*a*), upon each of which we find a fruit rod (*b*), to which there are attached four buds, and a tendon (*c*), with one bud. Next, we observe a branch with two buds, as is the case also on the outer ends of the laterals. Consequently for the next summer nine fruit buds remain on each of the four laterals, or altogether thirty-six buds for the formation of the summer branches and the production of fruit. Without allowing for special hindrances (which as abnormal departure from the natural law cannot be noticed), the young vine in its seventh year will accordingly produce seventy-two bunches, there being thirty-six fruit buds, each containing two bunches, which

at one-fourth pound each makes eighteen pounds.

As soon as four or five little leaves are perceptible above the last bunches and situate on the four young fruit rods produced by each fruit branch, the upper three of them will be shortened to three leaves, sufficient to secure food and shade to the young grapes, without withdrawing from them any access by means of some growing branch forsooth, while the entire vital force will be borne to it the more certainly. These three upper fruit rods are they which are designed to bear fruit, without obstructing in any way the later forming of the shape of the vine. Afterwards the layer or scion is seen in a much greater number on the thus masked fruit rods, which are found between leaf and branch (the appellation of which abundantly signifies their design) where nature seeks an outlet to the press of juice.

Those summer branches growing out of the lower buds of each of these fruit branches as well as out of the tendons, serving to guarantee wood and fruit for the next year, may be left to grow in their entire length without hindrance, and the layer or scion alone may then be removed, when the espalier is grown over so densely as to check the current of air, and so prevent the maturity of the grapes. This labor however must ever be done with the necessary prudence, so as not to injure the fruit bud now forming for the coming year, and never until the young berries have attained the size of a pea, nor when the vine is in bloom, in which period no kind of labor upon the vine should be undertaken, if it can be avoided, as it too frequently proves hurtful to the formation of the berry at this time. For this purpose I use a sharp knife, and at times leave something like little stumps upon those buds next to the lateral, or perhaps a leaf, in order to ward off every form of injury.

In order most feebly to facilitate a regular cultivation of the summer branches, these forks or tendrils (more minutely described in the beginning) must be removed whenever they are re-fastened. The young branches are too much disposed to acquire support among themselves, or elsewhere in some improper place, and often interfere considerably with a regular cultivating of the vine. Nevertheless this part of the labor yields no direct influence upon the productiveness of the vine, as many seem to imagine.

On the lower buds of the fruit rods (*b*), on the tendon (*c*), and on all the other branches having now two buds, the summer branches, which have grown forth, remain unhurt, are carefully tied until fall, and only the scions, if necessary, are removed. These young branches, if growing too luxuriantly, may be cut short about from the middle of September, without any disadvantage whatever, while in fact it tends to ripen the wood the sooner.

The Trimming in the Fall of the Seventh Year.—In the fall of this year those summer branches on the lower buds of the now on hand four fruit branches (*b*), are cut back to one bud while those strong, unreduced summer branches however, grown upon the tendon (*c*), as designed

to bear fruit, to four buds, in order to fruit branches.

The two summer branches, immediately above on the laterals, are cut back, the one intended for a tendon, to one bud, and the other to serve as a fruit branch, to four buds. The same operation is performed upon the next two summer branches above, and thus on the end of the laterals. For the sake of clearness, let me from this one designate the place (where tendons and fruit rods are seen together) by the name of starting places and numerate them from the stock upward, as one, two, or three. To give these tendons and branches (if at all feasible) some connecting point, at some small starting place of laterals, presented itself as a necessity, called for after the execution of the engraving, and we find it therefore not clearly represented there. Just so we discover on the lower laterals but two, instead of the three branches designated in the engraving, with each a tendon, which however does not interfere with the general treatment, as the form of the vine, adopted in this treatise so far as regards dimension, is but an ideal view of the case, which, as long as we observe the fundamental principle, may admit any modification, conditioned by the strength of the vine, or any other occasions.

The appellation "starting place," is intended then in the further progress of my communication to denote that point where a tendon and a fruit branch are found to stand in close proximity.

After the fall trimming of this seventh year, the vine is perfect according to its desired form, complete in its several parts—

Stock (*A*), four laterals (*a*), on each of which at three starting places a fruit rod and tendon are situated; and thus on all the four laterals twelve fruit branches (*b*), and twelve tendons (*c*).

RASPBERRY CULTURE.

BY A. M. PURDY.

This fruit following immediately after strawberries, and being so valuable for putting up, and delicious for table use, should be found in every garden, of even the smallest pretensions. It is also one of the most profitable fruits for market purposes, bringing the grower greater profits, with only a little trouble and small outlay. Many are deterred from setting them out from the disappointment they have experienced with the "Sucker" varieties winter killing, while others have the idea that they must go to the expense and trouble of staking each hill. This holds true with such varieties as the "Sucker," with perhaps the single exception of the "Philadelphia" which is very hardy and if cut back as afterwards described, requires no stakes. I have "sunk" a large amount of money in trying different sorts of Raspberries and am yet to find any but the Black Cap family and Philadelphia that prove hardy—although I do not wish to recommend the Philadelphia as among this class until I have given it further trial, and the price gets down to a reasonable figure, so that all can afford to have it, without running any risk of its proving tender. I recommend two distances for planting out. The first is, if ground is plenty, six feet each way, so the work can be nearly all done with the cultivator; and the second is, if land is limited, rows six feet apart and two or three feet apart in the row, and if cut back as below recom-

mended, forming a complete hedge one way or in the row.

Set only young, fresh, fall beyond roots, with the germ up, and but lightly covered. If the ground is not in good order throw a shovel of well-rotted compost in each hill. Keep well cleaned with a cultivator and hoe. If planted the first distance, potatoes can be planted half way between both ways for the first two years, and the tops used for mulching the Raspberries. When planted the second distance, strawberries or potatoes can be grown half way between for two years.

The first season cut the Raspberries back in the fall, to within one foot of the ground. This must be done, for if the whole top is allowed to remain on and bear fruit the next season, the fruit will so exhaust the small root, that it will either die or make a weak, sickly growth afterwards, besides the winds blowing the whole top back and forth damages the roots badly.

Manure well in the fall, and mulch with any coarse material. This keeps the surface moist, and adds largely to the growth of bush, and crop of fruit. After the first season, cut the new growth back to within three or four feet of the ground, and as the side branches grow out cut these back also, to within one foot of the main stalk. If this cutting back is well attended to, the bush will make a strong, stalky growth, and will, therefore, need no staking, besides yielding much larger and finer fruit.

As to varieties, we are yet to find any more reliable or profitable sorts than the Doolittle and Miami Blackcap and Purple Cane, and for family use would add the Golden Cup, Ohio Everbearing and Catawissa. The last two yielding a crop of fine fruit in the fall, after all other small fruits have disappeared. The two first are fully double in size and bearing of the common wild Black Cap. We know there are some who claim there is no difference and send out the common Black Cap for the Doolittle and Miami. Such a practice is a *perfect imposition* and one might just as consistently send out the wild Blackberry for the Lawton or Dorchester, or the wild Strawberry for the improved sorts.

The difference between the Doolittle and Miami is, that the former is fully a week earlier than the last, while the last is a much stronger bush, and not so thorny, and with me, proves a greater yielder. The fruit of either is fully double the size of any wild Black Caps that I have ever cultivated and much more juicy.

The Purple Cane yields an immense crop of medium sized purplish and red fruit, in fact, we cannot see how any sort grown can yield a greater crop of fruit than this sort, for the bushes with me are literally loaded every year with fruit. It will not bear carriage as well as the first sorts, but when shipped in quart boxes it carries a long distance and sells for high prices.

Were we confined to but one sort for family use, it would be the Purple Cane. Neither of them have ever winter killed with me, and require no protection.

BLACKBERRIES.—Following immediately after Raspberries, and keeping up the succession, and equally desirable for use, and more profitable as a market fruit, makes this fully as indispensable as the former. It should be set in rows eight feet apart and three feet apart in the rows or six to seven feet apart each way. The same instructions for mulching and cutting back Raspberries should be carried out for this fruit. All suckers that sprout away from the main stalks should be hoed off. Never dig plants from a fruiting plantation, or plow among them after the first season, for in either case it will cause an innumerable amount of suckers to grow, besides cutting off the roots that run the main stalks and thus detracting from the growth of the fruiting plants and soon ruining the entire plantation.

We know of no fruit, where it withstands the winter, that is more remunerative than the New Rochelle or Lawton Blackberry. Its yield

is perfectly astonishing, and as the prices in our cities have averaged from eight to twelve dollars, per bushel, one can see, at a glance, what its profits are. Its ordinary yield is one hundred bushels per acre, while, with good cultivation, it will yield two hundred bushels.

THE CONCORD GRAPE.

A grape, so well known as the Concord, and so often alluded to in our pages, would hardly seem to require any additional notice. But the recent vindication of the character we gave it, when first introduced by us to the public, demand that we should once more bring it before our readers.

Twelve years have passed since we described and figured the Concord in our Magazine—certainly not a long period in the history of grape culture—but yet carrying us back to a time when there was not a single known hardy grape of any value, which could be relied upon for a regular crop in the Northern and New England states.

It was at this opportune moment that the Concord was brought before the public; and the great value of its introduction is now easily estimated by the thousands and tens of thousands of pounds of superb grapes, which at a price within the means of the whole mass of the people, find their place in the markets throughout the United States. Catawba and Isabella were, twelve years ago, the only table grapes. Diana was but little known, and the Hartford Prolific and Delaware had just been introduced. Now we have the Concord, Rebecca, Allen's Hybrid, Union Village, Crevelling, Iona, Israella, Adirondac, Framingham, Rogers' Seedlings, Maxatawny, Cuyahoga and Diana Hamburg, not to enumerate several others of doubtful merit. In no fruit has there been more marked improvement than in the grape.

It would be useless to deny that much of this remarkable advancement in the culture of the grape may be traced to the advent of the Concord. In the Catalogue of American grapes, enumerated by some cultivators in 1854, more than fifty varieties found a place, yet scarcely one of them was worthy of attention; and after the introduction of so many worthless kinds it had become almost a settled belief, that the native grape would not submit to amelioration so readily as other fruits, and the attempts to improve it were almost, if not quite, abandoned. In proof of this we only need refer to the fact that all the known grapes of any excellence, other than accidental seedlings, with the exception of Allen's Hybrid and Rogers' Seedlings, have been produced since the Concord was brought into notice. Now the number is legion; and although but few of them have fruited, or yet been proved, there is little doubt but many new and desirable sorts will yearly be added to the list. So much of improvement we are thus indebted to the Concord, which renewed the assurance that good grapes could be produced from our native vine, with patience, perseverance and skill. Allen's Hybrid immediately followed, with another strong proof of the value of hybridization and the aid of the foreign grape in amelioration, and the still additional success of Mr. Rogers, Dr. Grant, and Mr. Moore of Rochester, has set at rest all doubts in regard to the grand results which will follow repeated endeavors at the improvement of our native vine.

It would be unprofitable reading to review in detail all that has been said against the Concord, and it would be better to pass over that period of its introduction, when so many cultivators denied our statement of its qualities, and seemed determined to class the Concord among the "jelly grapes," and reiterate its utter worthlessness—for we are charitable enough to believe it was a sad error of judgment, if nothing more—we prefer rather to append here the de-

cision of the Greeley Prize Committee, who, after the labors of two years, with all the best grapes before them, including the Iona, have now made their final decision, that the best grape—according to the demands of Mr. Greeley's offer—is the Concord. The report reads as follows:

The committee appointed by the Horticultural Association of the American Institute to award the prize of \$100, offered by the Hon. Horace Greeley, President of the Institute, for the best grape for general cultivation beg leave to report: First, that it is a matter of regret that the offer has not called out more competition from the thousands of persons now usefully and profitably engaged in the production of this delicious fruit, of which there were but five varieties presented for our examination at the late session. Second, one of the conditions of the offer was, that samples of the fruit be presented for examination by the committee, and therefore we were restricted to the consideration of such varieties as were brought before us. Thirdly, at a meeting of the committee held last year, a scale of points were adopted for our guidance in the decision on the grape. One of these points was the necessity of healthiness and hardness of the vine and foliage, by which is meant its ability to withstand the frost and mildew. Excellence of the fruit itself is, in our opinion, a point of great merit, but of infinitely less consequence for the general planting community than healthfulness and vigor, hardness and productiveness of the vine.

Fruit-growers are generally convinced of the importance of selecting such varieties as will prove profitable, and everybody understands what is meant by a "good market fruit," although it often happens that such are quite inferior to other varieties in their respective classes.

We believe this to have been the object in offering the premium, and that we were to select from among those kinds that might be brought before us, such a variety that could safely recommended to the millions to plant, with a tolerable certainty of being rewarded by satisfactory crops. With regard to some of the new and choice varieties brought to our notice as competitors, it will be recollected that, at the meeting of the committee held in September, 1865, we declared ourselves unprepared to make any expression, because we had not then a sufficiently extended opportunity for seeing the vines tested under varying circumstances throughout the country. Another year has brought us into farther acquaintance with the candidates, and better enables us to come to a conclusion, which, however, may yet prove premature. On these grounds, we have awarded the premium to the Concord, to exhibitor 33, W. X. Goldsmith, Newark, N. J., because we believe that, though of less excellence as a fruit than some of its competitors in their trial, it is found, under the most extensive culture in every part of the country, to be both hardy, productive, and satisfactory, in regard to its character as a vine; while the showy appearance of its fruit makes it most welcome to the millions, with whom it is very acceptable. For ourselves, however, we must be permitted to say that we wish the fruit were of a more refined character, in addition to the admirable qualities of this noble vine.

JOHN A. WARDER,
WM. S. CARPENTER,
P. T. QUINN,
E. WARE SYLVESTER.

No doubt this decision will have the hearty concurrence of the majority of grape growers throughout the country. That there are better grapes, viewed simply as to quality, few will deny—but that any grape possesses so many excellences, neither will any deny, and for hardness, vigor, productiveness, freedom from mildew, and general quality—it stands among grapes where the Baldwin does among apples—the Bartlett pear among pears—and the Hovey's

Seedling among strawberries—[at the East.—Ed. R. W.] the most desirable variety, adapted to all soils and situations; ripening its fruit from Maine to Georgia, and finding its way to the market in such abundance, and at such reasonable prices, that all who love grapes can have their fill. The Concord is, in fact, the only perfectly hardy good grape that has yet been produced. Upon this subject we shall have something to say in a future number. It is time that the term hardy should be defined. A pear-tree or an apple-tree that required protection in winter we should not call hardy; shall any difference be made with the grape?—[Hovey's Mag.]

PREMIUM FOR GRAPES.

Feeling deeply interested in the improvement of our native grapes and wines, we offer the following premiums: A silver pitcher, two goblets and waiter, to cost not less than \$350, as the first premium; a silver cup to cost not less than \$100, as a second premium, and a silver cup to cost not less than \$50, as the third premium.

The first premium to be given to the best general wine grape of our whole country. The second premium to be given to the best variety of grapes for wine purposes in the State of Ohio, provided it is not awarded to the grape that receives the first premium, in which case it will be given to the second best wine grape in the country. The third premium to be given to the best table grape, for general purposes, in the country.

Our requirements are, that the plants, when generally cultivated, shall be perfectly healthy, hardy and productive, and the fruit shall produce a wine of good quality, as to flavor, strength and quantity. The fruit shall be shown at the coming fall consolidated exhibition of the American Winegrowers' Association of Ohio and Cincinnati Horticultural Society, in quantities of ten pounds or more, with samples of the wines from the competitors for the first two premiums; if practicable.

LONGWORTH WINE HOUSE.

Terms Used in Describing Fruits.

The frequent use of descriptive terms, applied to trees and fruits, render them useful and interesting to the mass of our readers, as we design them to be.

Calyx—the remains of the flower left at the end opposite the stem.

Basin—the depression around the calyx.

Crown or Summit—the ridge surrounding the calyx.

Stem—the part connecting the fruit to twig of the tree.

Cavity—the depression surrounding the stem.

Base—the part most remote from the crown.

Core—the cavities in the center of the fruit containing the seeds.

Core surroundings—the dim lines in the flesh, which partly or wholly surround the core.

Flesh—the edible portion of the fruit.

FISH CULTURE.—The Machias Union gives an account of the efforts of Mr. N. W. Foster, of East Machias, who is devoting a good deal of time, attention, and labor to the work of restocking our New England rivers with the valuable fish which have been driven from them by the numerous dams erected during the past forty or fifty years. He has demonstrated that it can easily be done, by providing sufficient fish-ways in the dams, and then depositing the spawn of the fish in the upper waters at the proper season. The young fish will next year return to their native homes if they can get there, for the purpose of depositing their own spawn. Thus, as he believes, an immense amount annually will be added or restored to the resources of the State. He has proved the truth of his theory by stocking ponds and streams in the eastern part of the State with salmon, shad, alewives, trout, &c.

EDITOR'S TABLE.

THE CLINTON GRAPE.

At a late meeting of the Farmers' Club of N. Y., the following remarks were made concerning this grape by some of the members. Mr. Dodge said: Next, (to the Concord) I prefer the Clinton, but it must hang till late, even till ice is made; then it is really a sweet grape. Mr. Cavanah—After frost comes, the Clinton is very fine: it does not have a watery spoiled taste, and it is grateful to sick people. It wants plenty of wood. My opinion is, that it will become the best wine grape in this country. Dr. Sylvester remarked: The Clinton is adapted to general cultivation. It will grow on poor ground.

DEVON CATTLE.

In answer to enquiries, we will state, that Dr. W. W. Henderson of Bridgeton, Mo., is the largest breeder of Devons in this State. He has a very superior herd and sells them at reasonable prices. This breed is justly coming into great demand. It is well adapted to our State. The cows are excellent milkers—giving milk of the very highest quality. For working purposes the oxen are unsurpassed.

Prospects for Winter Wheat.

The prospects for wheat are generally promising in Missouri. The winter has been very favorable—but little extreme cold and the weather has been settled and favorable. Should there be but little freezing and thawing yet—we think we shall have as good prospects for a large wheat crop as we have had for many a year. Quite a large breadth has been sown, and we hope enough wheat may be produced to lessen the present high prices of flour.

MOVEABLE COMB HIVE.

W. F. and others. We have numerous inquiries as to the manufacture of Moveable Comb Hives, but do not know who has them to sell, or at what rates. Those in the business should advertise.

AYRSHIRE BULL.—JOHN H. RICE of Morris-town, Cass county, Mo., wishes to purchase an Ayrshire Bull.

TRUTH.

"Truth crushed to earth shall rise again." Why? Because it is eternal; it can afford to wait its time, for it is sure of triumph. Error is only a jar in the machinery; that removed, all will be right again; for this machine is law, the law immutable of nature, of God himself, who is unchangeable, eternal. We therefore trust to truth. Truth is that which is, which is left to itself. If we follow it we can never err. We may be traduced by the unthinking and reckless; but we shall be right in the end. God sees us right all the while.

See Sam. J. Eastman's advertisement of Brazilian Sweet Potato.



[Written for Colman's Rural World.]
THE ANNIVERSARY.

Just five and twenty years gone by
My parents dear, were wed;
Just five and twenty—would it were
That day come back instead.

Then, both were young and free from care,
No sorrow either knew;
Now, they are broken, feeble, old;
May God their youth renew.

Now, children, five, around them are;
Three dear ones rest in heaven:
Two brothers—one sweet sister dear,
They to the grave have given.

May God our Father spare them long
To bless their children here.
May He from sorrow keep them free.
Protect my parents dear.

NELLIE.

[Written for Colman's Rural World.]
The Childhood of Man.

I cannot enough admire a child—the beauty of its limbs, perfect and clear eyes, so inquisitive, and knowing no evil, the tenderness of its cornation cheek, the toddle of its active life—but, most of all, the unsunned purity of its life—the fire of the world has never burned it hard; it has not learned the devices of the world: as the Maker gave it, so it comes, so it grows, let it but grow purely. Here is a white page indeed, to write upon. How careful we should be what we write upon it.

This child has a nature that we sometimes see in a man—a man grown up in his first purity, with the strength and culture of a man retaining the original stamp of purity. This man is a power in the world—a moral power, as well as a physical strength. He is, mark you, what God designed him to be—a child (of heaven) developed. Such a man is half a woman—his heart is all that; his strength is much greater and his purity too. But he helps the woman by his greater strength; he keeps her from falling; she needs his strength to aid her. This would not be were there not so much corruption—were all men like him—like this child grown. Children are angels in this respect, and he has continued his angelic nature, and is fortified against adult development of evil.

The old become children again. This is nature's beautiful working. Imagine a man with all his dark and ruling passions continued in old age, tottering on the verge of the grave. The man is softened down; the evil hold contracted in life, relaxes, and by degrees he becomes what he was when he entered the stage of life. He now goes out again at the same door, childhood—second childhood as we call

it—childhood continued as it is; in our model man never covered, never lost sight of, always fit to be in the sight of angels whence he came. So should we all be. A few are so. F.G.

LOVE.

A paragraph in one of the papers reads thus: "The grand essentials to happiness in this life are something to do, something to love, and something to hope for." And this comprises about the whole. We must have something to do to keep us from idleness which is the mother of many evils, beginning usually with *ennui*, and ending often with the gallows, or something short of it.

So we must have our affections employed—we must have something, whatever that may be; if evil, we are unfortunate; if good, we are indeed lucky, for then half of the battle is already won.

We must not only be occupied, and love (and love induces occupation), but we must have something in the future to beckon us on, to cheer us, and this object is connected more or less with what we love; it is frequently, so that love sums up the whole. Not necessarily sexual love; but love in general. It is necessary that the farmer loves his farm, his farming operations—not exclusively, or above his fellows or his God. It is love that rules the world in all its departments.

HOW TO SUCCEED.

If we wish to see what labor does in the world, mentally as well as physically and morally, we are to compare civilization with barbarism. It is labor alone that has made this difference—labor to direct, as well as to do. Thus schools have been instituted. This was for the improvement of the mind for without mind to direct, the great civilization could never have been accomplished. It is therefore mind first, showing the necessity of mental advantage. To see the force of this more particularly, we are but to have a steady eye on the work; no confusion; one by one, added and arranged. It is but using the alphabet so to speak—not the great thing we deemed it, to be mastered by the few, by the favored, a complicated machinery. Do what is before us; do it one by one, steadily, and we shall succeed—we must succeed.

After Marriage.

The happiest marriages are those that continue the courting time.

All should not be known at first.

But new discoveries constantly made of what is pleasant in mind and heart.

To this end, there must be constant progress.

There must be modesty; the shyness must be continued more or less.

We know such a couple; we are happy to know several such; and life is to them a pleasant excitement, even after twenty years of marriage, till the children themselves begin to court.

To an idle man all days are alike; to the busy man there is a great difference; each day has its significance, including Sunday.

DOMESTIC DEPARTMENT.

TO EXTINGUISH A FIRE IN A CHIMNEY.—Throw some powdered brimstone on the fire in the grate, and then put a board or something in the front of the fireplace to prevent the flames descending into the room. The vapor of the brimstone ascending the chimney will then effectually extinguish the soot on fire.

TO REMOVE STAINS FROM SILK.—Stains produced by vinegar, lemon juice, oil of vitriol or other sharp corrosives, may often be removed from silks by mixing a little pearlash with soap lather, and passing the silk through them. Spirits of hartshorn will also often restore the color.

TO REMOVE LIME SPOTS.—Lime spots on woollen cloths may be completely removed by strong vinegar. The vinegar effectually neutralizes the lime, but does not generally affect the color of the cloth. Dark cloth, the color of which has been completely destroyed in spots six inches square, has thus had its original color perfectly restored.

TO MAKE CALICOES WASH WELL.—Infuse three gills of salt in four quarts of boiling water, and put the calicoes in while hot, and leave them till cold; in this way the colors are rendered permanent, and will not fade by subsequent washing. So says a lady who has frequently made the experiment herself. Nothing can be cheaper or quicker done.

PREPARATION FOR THE TEETH.—Dissolve two ounces borax in three pints of water; before quite cold add thereto one teaspoonful of tincture of myrrh and one tablespoonful of spirits of camphor; bottle the mixture for use. One wine-glass of the solution added to half a pint of tepid water is sufficient for each application. This solution, applied daily, preserves and beautifies the teeth, extirpates tartarous adhesion, produces a pearl-like whiteness, arrests decay, and induces a healthy action in the gums.

TO CLEAN KID GLOVES.—First see that your hands are clean, then put on your gloves, and wash them as though you were washing your hands in a basin of turpentine until quite clean; hang them up in a warm place, or where there is a good current of air, which will carry off the smell of the turpentine. This method was brought from Paris, and many thousand dollars have been made by it.

CAMPHORATED DENTIFRICE.—Prepared chalk one pound, camphor two drachms. The camphor must be finely powdered by moistening it with a little spirits of wine, and then intimately mixed with the chalk.

CEMENT FOR CHINA, GLASS, &c.—To quarter of an ounce of gum mastic and as much spirits of wine as will dissolve it. Soak a quarter of an ounce of isinglass in water till it is quite soft; then dissolve it in rum or brandy till of the consistence of glue. To this add one drachm of gum ammoniac, well rubbed and mixed. Put the two mixtures together in a vessel, and apply with a small brush.

[Reported for Colman's Rural World.]

METEOROLOGICAL TABLE.

BY A. FENDLER, ESQ., ALLENTON, MO.
FEBRUARY, 1867.

Thermometer in open air.
7 A.M. 2 P.M. 9 P.M. Mean of Month.
29.6. 48.5 36.3 38.1
Maximum temp. 72.0, 13th, 2 P.M.
Minimum " -1.0, 10th, 7 A.M.

Range, 73.0
Barometer—height reduced to freezing point.
7 A.M. 2 P.M. 9 P.M. Mean of Month.
29.541. 29.495 29.521. 29.519
Maximum, 30.073, 10th, 7 A.M.
Minimum, 28.997, 2d, 2 P.M.

Range, 1.076
Amount of rain and melted snow, 3.48 inches.
Depth of snow, 2½ inches.

No grindstone should be exposed to the weather, as it not only injures the wood-work, but the sun's rays harden the stone so much as, in time, to render it useless. Neither should it run in water, as the part remaining in the water softens so much that it wears away faster than the other side; and many a soft place in a stone has arisen from this cause alone, and not from any inequality in the grit.

St. Louis Wholesale Market.

Corrected for COLMAN'S RURAL WORLD, by

SHRYOCK & ROWLAND,

Successors to W. P. & L. R. Shryock,

COMMISSION MERCHANTS

COTTON & TOBACCO FACTORS,

And Agents for the sale of Manufactured Tobacco. 210 Levee and 216 Commercial St., St. Louis. Particular attention paid to the purchase of Plantation Supplies and General Merchandise.

March 14, 1867.

Cotton—24c to 26 ¢ lb.
Tobacco—Lugs, \$2.75 to 3.60 ¢ 100 lbs.
Shipping leaf, \$6.50 to 12.00.
Manufacturing leaf, \$10.00 to 35.00.
Hemp—Hackled tow, \$145 ¢ ton.
Hemp, \$155 @ 165.
Lead—\$8.75 ¢ 100 lbs.
Hides—Dry salt, 16c; Green do. 9½ ¢ lb.
Dry flint, 19c to 20 ¢ lb.
Hay—\$25.00 @ 27.00 ¢ ton.
Wheat—Spring, \$2.25 to 2.40, ¢ bush.
Winter, \$2.90 to 3.10 ¢ bus.
Corn—83c to 90 ¢ bus. firm with large sales.
Oats—67c to 70 ¢ bus.
Barley—Spring, 1.25. Fall, 2.05, active and advancing.
Flour—Fine, \$8 to 8.50 ¢ bbl.
Superfine, \$9 to 10.00 ¢ bbl.
XX, \$12.00 to 14.00 ¢ bbl.
Ex. Family, \$15.50 to 16.50 ¢ bbl.
Butter—Cooking, 15c to 20; table, 31 to 38, ¢ lb.
Eggs—33c, ¢ doz., shipper's count.
Beans—Navy, \$3.60 @ 3.80, ¢ bus.
Castor, \$2.00 ¢ bus.
Potatoes—\$90 to \$1.10 ¢ bus., stock very light.
Salt—per bbl. \$3.20. G. A., sack, 2.50 to 2.60
Onions—\$6.50 per bbl. Scarce.
Dried Fruit—Apples, \$2.00 to 2.60 ¢ bus.
Peaches, \$3.50 to \$5 ¢ bus.
Cranberries—\$14.00 per bbl.
Corn Brooms—\$1.50 to 3.50 per doz.
Groceries—Coffee, Rio, 25c to 27 ¢ lb.
Tea, \$1.25 to 2.00 ¢ lb.
Sugar, N. O., 14c to 14½ ¢ lb.
Crushed & Refined, 16½ ¢ lb.
Molasses, N.O., 80c ¢ gal.
Choice Syrups, \$1.35 to 1.70, ¢ gal.
Soap—Palm, 7½ ¢ lb.
Ex. Family, 9½ ¢ lb.
Castile, 14c ¢ lb.
Candles—16c to 22 ¢ lb.
Lard Oil—\$1.10 @ 1.15 ¢ gal.
Coal Oil—50c ¢ gal.
Tallow—9½ ¢ lb.
Beeswax, 30c to 35 ¢ lb.
Green Apples—Choice Jenetons, \$5 @ 6 50, ¢ bbl.

Peach Trees.

A few thousand Peach Trees (part Hale) also a few barrels of frozen PEACH PITS for sale at the Carbondale Nursery, W. S. MURPHY, March 15-21; Carbondale, Jackson co., Ills.

See Sam. J. Eastman's advertisement of Brazilian Sweet Potato.

PREMIUMS TO CLUB AGENTS.

To any person sending us the names of **FOUR** Subscribers and **SIX** Dollars, we will send post-age prepaid, **TWO DOZEN PLANTS** of the **SAINT LOUIS RASPBERRY**, or **TWO DOZEN PLANTS** of **DOOLITTLE'S IMPROVED BLACK CAP RASPBERRY**, or **SIX** well rooted **CONCORD GRAPE VINES**.

To any person sending a Club of **TEN** and **FIFTEEN** Dollars, we will send free, **THREE** TIMES the number of any one of the above Premiums, or **ALL THREE** of the abovenamed Premiums, as the Agent may choose.

To any person sending us a Club of **FIFTY** Subscribers at **Two Dollars** each, we will deliver, suitably packed at any express office or other place in **St. Louis**, one of **WILCOX & GIBBS'** splendid **FAMILY SEWING MACHINES**, worth \$58.

Or, for **Seventy-five** Subscribers, at our lowest club rates, viz., \$1.50 each, we offer the same Premium.

The **WILCOX & GIBBS' FAMILY SEWING MACHINE**, is one of the most popular in the country; is very simple and strong, uses a straight needle, runs very light, and is warranted in all respects.

ANOTHER SPLENDID PREMIUM.

We offer as an additional Premium, one of **WHEELER & WILSON'S SEWING MACHINES**, worth in **St. Louis**, **SEVENTY-FIVE DOLLARS**, with glass cloth presser, hemmer, braider and corder, all complete and warranted, to any person who will send us **Seventy-five** Subscribers at our lowest club rates, viz., \$1.50 each. Or the same premium to the getter up of a club of **Fifty**, at \$2 each. Here is a chance for every one to get a No. 1 Sewing Machine, at a cheaper rate than ever before offered. We are determined to offer such inducements that the *Rural World* shall circulate in the family of every reading farmer in the West.

If any agent fails to make up his club to the full size, he can send on such names as he can get, and the balance in money, and the Sewing Machine will be delivered to him or her. Here is a good chance for doing good and being well rewarded for it.

PREMIUM IN TREES AND PLANTS.

There are many who wish to plant Fruit Trees and Small Fruits. To such we will say, that we will pack, and deliver at any Express or other office in **St. Louis**, the following special assortment of Fruit Trees and Small Fruits, upon their sending to us the names of **Thirty** Subscribers, at \$1.50 each. This assortment will fill the requirements of a small family.

- 25 apple trees, best early and late.
- 6 peach " " "
- 6 dwarf pear, " "
- 6 grape vines, 3 varieties.
- 12 currants, 2 varieties.
- 12 gooseberries.
- 12 Lawton blackberries.
- 12 Doolittle raspberries.
- 12 St. Louis " "
- 50 strawberries assorted.

It is not necessary that those who compose a club should receive their papers at the same Post-office.

Clubs can at any time be enlarged.

Single subscribers who remit \$2 for their subscriptions, can afterwards send the names of three more subscribers and four more dollars, and thus form a club of four for six dollars.

Be careful to give the name of the post-office for each subscriber.

GREAT SALE

Of Alderney and Grade Cattle, South Down Sheep, Thoroughbred and Trotting Stock, Farm Implements, &c. at the residence of **J. K. CLARK**, on the Natural Bridge Road, six miles west of **St. Louis**.

In consequence of having disposed of my farm, I will offer at public auction on **MONDAY, MARCH 18th**, my entire herd of grade cows and heifers, which I have been grading up for the past 10 years, for my own use, from premium milkers and butter cows, by a thorough bred Alderney bull, a son of the celebrated Jersey cow Flirt, which took the first premium at the **St. Louis Agriculture Fair**, in 1860; also the before mentioned Alderney bull.

Also my flock of 150 Southdown sheep and several fine bucks, one of which being the imported buck "Samuel," imported by Mr. Samuel Toms of Oshawa, Canada West, and which took the sweepstake premium at the **St. Louis Agricultural Fair** in 1866, against some of the finest bucks in America.

The thoroughbred stallion **Altred Harris**, which ran the four mile and repeat race in 7 38 1-2 against Leathelings at the **Abbey Track**, in 1866. Also several fine trotting mares, 4 large wagon horses, and a fine well broke trotting horse, six years old.

Three farm wagons, 1 spring wagon, 1 buckeye mower, 1 sulkey hoe, 2 revolving horse rakes, 1 roller, 1 hay elevator, 1 cart, 1 horse power with circular saw, 1 ditto with sweep saw, 1 cutting box and a large lot of farming implements, 12 sets harness, 1 buggy and harness, 1 barouche and harness, 2 hay frames; also several stacks of hay, oats and straw. Terms Cash.

Brazilian Sweet Potato.

Introduced into Southern Illinois in last three years by **Sam'l J. Eastman**. For **GREAT YIELD** (500 to 600 bushels per acre) **EARLINESS**, **SUPERIOR QUALITY**, **HARDINESS** and **EASE OF CULTIVATION**, (one-third less labor than other sorts—plants stand up—don't take root) are destined to supersede all other sweet potatoes.

I helped cultivate and dig the Brazilian Sweet Potato last season, they proved all and more than is claimed for them. I would rather give \$1.50 per hundred for these plants than take the gift of any other kind. **JOHN LORD.**

They were the finest potato I ever saw.

COL. E. N. BATES,

Member Illinois Legislature from Marion county. Satisfy yourselves by sending for circulars telling all about them.

Terms cash, or C. O. D.

Potatoes per bushel, \$10; 2 bushels, \$18; 3 do, or, 1 bbl, \$24. Plants per hundred \$1.50; per 1000, \$10, a discount on larger orders.

Potatoes and plants, pre-paid, by mail in 4 lb. packages; potatoes per package \$2.00. Plants per hundred \$2.00.

N. B. Nansemonds and **Bermudas**, \$12, per bbl. Order early, and duplicate when wanted.

P. S. Say in what paper you saw this

Address, **SAM. J. EASTMAN,**
Box 37, Anna, Union county, Illinois.

MAKE YOUR OWN SOAP.

WITH

SAPONIFIER.

Only 2 cents the pound of excellent soap if you save and use your waste grease. Only 6 or 7 cents the pound of the very best soap if you buy the grease. Directions attached to every package. All that is required is an iron kettle holding one or two gallons. For sale at every drug and grocery store.

BEWARE OF COUNTERFEITS.

Be particular in asking for **PENN'A SALT MANUFACTURING COMPANY'S SAPONIFIER.**
March 15-ly

Sorghum Sugar a Success.

It can be made at a cost of less than five cents a pound. We will show any person how to make sugar from Sorghum, that will not color coffee, who will call on us, free of charge.

We will give \$1000 in four premiums, to the farmers that will make the largest amount of mush sugar from five acres, and one acre of Sorgho Cane the coming season.

Pure Cane Seed for sale cheap.

Persons wishing to compete for the above must address with stamp, **BRANDON RIGGS,**
P. O. Box 1035, St. Joseph, Mo.

FARMERS' INSURANCE COMPANY, OF ST. LOUIS, MO.

INSTITUTED BY STATE AUTHORITY.

Authorized Capital,

\$100,000.00

Office—N. E. Corner of Fifth and Chesnut Streets.

NORMAN J. COLMAN,
President.

P. M. KIELY, Secretary.

JOSEPH W. WHITE, Adjuster.

This Insurance Company has been organized especially for the benefit of

WESTERN FARMERS.

It will take no Fire Risks except on

FARM BUILDINGS.

It will not take Fire Risks in large towns or cities, which frequently prove so disastrous to Insurance Companies in case of large fires.

It will insure the **LIFE OF ALL KINDS OF**

LIVE STOCK.

It will insure Horses, Mules, Cattle, &c.,

AGAINST THEFT!

It will insure the

LIVES OF PERSONS,

For the benefit of the wife and children.

LOSSES Will be promptly Adjusted and Paid.

Efficient AGENTS wanted in every County.

Letters addressed to the Secretary promptly answered.

The Best Potatoes!

Are now offered so low that anybody can afford to try all and thus know just what kinds are best suited to his locality. Four pounds and six best kinds sent by mail post-paid, for \$1: eight pounds and fifteen best kinds for \$2: twelve pounds and twenty-five kinds for \$3, viz: 1 Shaker's Fancy; 2 Gleason; 3 Harrison; 4 Strawberry; 5 Early Goodrich; 6 Early Sebec; 7 Cuzco; 8 Coppermine; 9 Pinkeye Rusty-Coat; 10 Andes; 11 Early White Sprout; 12 Early Minnesota; 13 Early Buckeye; 14 Prairie Seedling; 15 Monitor; 16 Garnet Chilli; 17 Calico; 18 Early St. John; 19 Davis Seedling; 20 Titicaca; 21 White Peachblow; 22 Prince Albert; 23 Early York; 24 Jackson White; 25 Mountain June. **SMITH, JONES & CO.**
Huron, Erie county, Ohio. March 15-1t

Wanted, 3 or 4 FARMERS,

Or other intelligent young men, IN EACH COUNTY IN THE WEST. To engage in a business paying from \$100 to \$150 per month, during the spring and summer. Address Zeigler, McCurdy & Co., 509 Olive St., Saint Louis Mo. marl-4

Native Evergreen Plants.

The following varieties 5 to 12 inches high at \$7 per 1000 or \$25 for 5000: Balsam Fir, White Spruce, Arbor Vitae, White Pine and Hemlock. Packing free. **JAMES A. ROOT,** Skaneateles, N. Y.

ABRIDGED LIST OF
Fruit Trees, Small Fruits,
&c., cultivated by
**COLMAN & SANDERS, AT THE SAINT
LOUIS NURSERY,**

On the Olive St. Road, 5 miles west of the city,
Only 2 miles west of the City Limits,
City Office in the Office of COLMAN'S RURAL WORLD,
N.E. cor. of Fifth and Chesnut, St. Louis, Mo.

APPLE TREES.

5 to 7 feet, price \$20 per 100; 25 cents each. Extra sizes higher.

Our stock of apple trees is large and very fine. We have, with many others, the following varieties, viz: Early Harvest, Red June, Red Astrachan, High Top Sweet, Sweet Bough, Early Strawberry, Kirkbridge White, Summer Queen, Am. Summer Pearmain, R. mbo, Fall Queen, Rawles' Janet, Winesap, Ortley, Yellow Belleflower, Rome Beauty, Missouri Pippin, Penn. Red Streak, Ben. Davis, Bastard Jenetion, Smith's Cider, Talman's Sweet, Fulton, Willow Twig, White Pippin, Gilpin, Wagner, &c.

PEACHES.

Price \$25 per 100, 30 cents each.

We have given much attention to the selection of the best varieties of the Peach, both for market and home use; and we think the following list will please all. They are given in about the order of ripening.

Hale's Early (new), Troth's Early, Early Yellow, Early Cling, Serrate Early York, Cooleedge's Favorite, Yellow Raricripe, Large Early York, George the Fourth, Crawford's Early, Red Cheek Melacoton, Crawford's Late, Old Mixon Free, Heath Free, Stump of the World, Heath Cling, LaGrange, Smock's Free.

PLUMS

Price 75 cents.

We have choice trees of this fruit raised on Plum stock. We have the following among other varieties: Smith's Orleans, Imperial Ottoman, Washington, Imperial Gage, Lombard, Coe's Golden Drop, General Hand, Yellow Egg, Green Gage, Damson, Chickasaw.

DWARF PEARS.

Our stock of Dwarf Pears cannot be surpassed anywhere. We have been cultivating Dwarf Pears for fruit many years, and have found them highly successful. We think that every one should have Pears in his garden, whether dwarf or standard. They are a most healthful and delicious fruit, and can be raised as easily as apples. Price 75 cents.

We have the Bartlett, Doyenne d'Ete, Dearborn's Seedling, Zoar Beauty, Buffum, Duchesse d'Angouleme, Louise Bonne de Jersey, Howell, Sockel, Belle Lucrative, Flemish Beauty, White Doyenne, Steven's Genesee, Beurre Diel, Easter Beurre, Vicar of Winkfield, Glout Morceau.

Standard Pears, price 75 cents.

CHERRIES.

We have a fine lot of the best sweet Cherries—nice trees—such as Black Tartarian, Black Eagle, Gov. Wood, Coe's Transparent, Yellow Spanish, Sparhawk's Honey, Early Purple Guigne, May Duke, Late Duke, &c. Price 75 cents each.

APRICOTS and NECTARINES. Several best varieties of each. Price 50 cents each.

QUINCES. Price 50 cents each.

STRAWBERRIES.

The following are new varieties: Agriculturist, \$1 per dozen, \$4 per hundred. Green Prolific, same price. Metcalf's Early, \$2 per dozen, \$10 per 100. French's Seedling, \$2 per 100.

We have also, Russell's Buffalo, Wilson's Albany, Warner's Seedling—a fine late variety, \$2 per 100, \$10 per 1000. Wilson's Albany and Iowa in large quantities at much lower rates.

RASPBERRIES.

Doolittle's Black Cap—best of its class, \$1.50 per dozen, \$5 per 100, \$25 per 1000. Philadelphia, \$4 per dozen, \$30 per 100. St. Louis, \$1.50 per dozen, \$5 per 100.

BLACKBERRY.

New Rochelle or Lawton, \$1.50 per dozen, \$6 per 100.

GOOSEBERRIES.

Houghton Seedling, fine large plants, \$1.50 per doz., \$6 per 100, \$40 per 1000. Downing's Seedling, \$3 per dozen.

RHUBARB.

Linnaeus combines all the best qualities—earliness, productiveness, large size, and mild pleasant flavor. Price \$2 per dozen, \$80 per 1000.

ASPARAGUS.

Large Purple Top, two year old plants. Price \$2 per 100. We have a large lot of fine, strong one

year old plants, which we offer at \$1 per 100, \$7.50 per 1000.

APPLE SEEDLINGS.

30,000, 1 year, suitable for Budding, \$3 per 1000.

GRAPES.

Besides plants of the ordinary sizes and price, we have several hundred each of extra strong three and four year old plants of Concord, Clinton, Bullitt and North Carolina, which we offer as follows: 50 cents each, \$4 per dozen, \$30 per hundred.

We have also, a good Assortment of

Evergreen Trees and Shrubs, Roses, Dahlias, Hardy Flowering Plants, &c.

Send 2 cent stamp for Catalogue of our Stock.

Novelties in Flower Seeds.

PER PACKET.

APPLOPAPPUS RUBIGINOSUS. A showy, autumn flowering, hardy Annual, growing about 3 feet high, and producing large terminal corymbs of yellow Grindelia-like flower-heads. 25 cts.

ASTER. New rose-flowered VICTORIA and original CHINESE. 3 splendid varieties, each. 25 cts.

IPOMEEA NEBRASKENSIS. A new and very showy hardy Morning Glory. 10 cts.

LEPTOSIPHON HYBRIDUS. A splendid new variety of this desirable hardy Annual. 25 cts.

LILIUM AURATUM. This is the first season we have been able to obtain seeds of this magnificent Lily. They should be started in pots and removed to the open ground when the plants become well established. 15 seeds for. 75 cts.

LOBELIA. "Snow Flake," } Splendid
"Blue King," } Bedding
"Paxtoniana," } Plants. 50 cts.

LYCHNIS HAAGEANA HYBRIDA. A beautiful new variety of this desirable Perennial, of a very sportive character, the colors varying from scarlet, blood-red, purple and orange, to white, &c., 25 cts.

PRIMULA SINENSIS. "Double." A great novelty in this charming Greenhouse Annual. 15 seeds for. \$1 00
"ERECTA SUPERBA," 50 cts.
"FILLICIFOLIA RUBRA," 50 cts.

PYRETHRUM RUBRUM. A splendid deep-blood colored variety of this hardy Perennial. 25 cts.

SALVIA SPLENDENS. Brilliant bright scarlet Bedding Plant. 25 cts.

SCABIOUS. "Benary's New Double Dwarf." A splendid novelty in Scabious, producing round-blooming flowers, of beautiful colors, and resembling the Pompon Chrysanthemum. 25 cts.

VIOLA CORNUTA. Dwarf perennial herbaceous plant, with small heart-shaped leaves, yielding a succession of delicate mauve-colored flowers. A great acquisition. 25 cts.

VISCARIA CARDINALIS. A new variety of this charming Annual, of a brilliant magenta color; this Viscaria is quite as important an introduction as was the Crimson Flax, to which it is a very suitable companion. 25 cts.

WHITLAVIA GLOXINIOIDES. A very elegant novelty of the same habit as W. Grandiflora, with the addition of a multitude of Gloxinia-like blossoms, of which the tube of the corolla is a pure white; hardy Annual. 50 cts.

XERANTHEMUM ANNUUM STRIATUM FL. PL. A striking new variety of this favorite Everlasting. The color of the large double flowers are bluish, striped and tinted with rose, red, crimson and purple. This new variety will prove an invaluable acquisition. 50 cts.

ZEAL JAPONICA FOL. VARIEGATA. Striped Leaved Japanese Maize. This beautiful ornamental Corn grows from 4 to 6 feet high; the foliage is beautifully and evenly striped or ribboned with alternate stripes of green and white. Planted in groups on a lawn, it is the most desirable of all the large, ornamental foliaged plants. 25 cts.

All of the above by mail on receipt of the amount. Send for our Flower Seed Catalogue, which contains also a Descriptive List of 100 varieties of French Hybrid Gladioli.

J. M. Thorburn & Co.,

15 John Street, New York.

THE FOLLOWING**HORSES will Stand**

The ensuing season at **HIGHLAND FARM**, on the Manchester road, 22 miles west of St. Louis.

VOUCHER, by Wagner. Dam, imported Britannia by Muley. At \$25.

DERBY, by imported Eclipse. Dam, Lady Taylor by Glencoe. At \$15.

REVEILLE, by Membrino Chief. Dam by Bob Letcher, he by Medoc. At \$10.

Good pasturage for mares from a distance, at \$2 per week; every care taken to prevent accidents or escapes, but no accountability should they occur. The money must be paid in all cases before the mare is taken away. B. F. HUTCHISON.

March 1st, 1867.

Flower Seeds in Collections.

The five collections that should be sown in every Garden in the country are:

12 varieties of finest German Asters, for	\$1.00
12 " " " Stocks, " "	1.25
8 " " French Camelia Balsams, for	1.25
10 " " Beautiful Phlox Drummondii, for	75
8 " " Portulaca for,	40

ALSO, COLLECTIONS OF

100 " " Annuals, Biennials & Perennials, 5.00
50 " " " " " " " " for 2.50
20 " " " " " " " " " " 1.00
10 " " " " " " " " " " 50
20 " " " More Rare Annuals, " 2.00
10 " " " " " " " " " " 1.00
20 " " " Choice Green House Seeds, " 4.00
40 " " " " " " " " " " 7.00
20 " " " Hardy Biennials & Perennials, for 1.00

ALL STRICTLY OUR OWN SELECTION.

Send for our Flower Seed Catalogue.

J. M. Thorburn & Co.,

15 John Street, New York.

New Catalogue.**BEDDING PLANTS.**

My Descriptive Catalogue for Spring of 1867 is now ready for distribution, and will be mailed to all applicants. HENRY MICHEL,

With Wm. Koenig & Co., 207 North 2d St.,
Feb. 15-5t St. Louis, Mo.

A Fine Morgan Stallion for Sale.

Was bred in Vermont, out of a Hambletonian mare; is a dark bay without any white, is well broke, fast and stylish, is a good stock-getter; in disposition so gentle that a child can handle him—yet if desired will get up to inspire a horseman. I have a few very fine colts, one and two years old this season of his get out of Morgat mares. All of them will be sold low. My poor health being the only inducement to part with them. JOHN A. BENSON, Lacon, Marshall county, Ill. March 15-2t

Novelties in Vegetable Seeds.

PER PACKET.

BLACK WAX BUSH BEANS. Same style of pods as the German Wax Pole, and equal to it in quality, very desirable. 25 cts.

GIANT WAX POLE BEANS. Pods from 6 to 9 inches long—fine for succotash. 25 cts.

TRIMBLE'S CELEBRATED SUGAR CORN. The sweetest variety in cultivation. 25 cts.

BLACK PEKIN EGG PLANT. A great acquisition. Fruit round, black, and of most delicious flavor; the foliage is bronze and very ornamental. 25 cts.

GIANT CASTLE LEEK. Extra large and solid. 25 cts.

NEW DWARF WATERLOO PEAS, growing but 1½ feet high, a very great cropper, \$2 ½ quart.

MCLAN'S WONDERFUL PEAS. New wrinkled variety, growing 2 feet high. \$1 ½ quart.

MCLAN'S EPICURIAN PEAS. Another new wrinkled variety, growing 2 feet high. \$1 ½ quart.

NEW WHORTLEBERRY TOMATO. A new and entirely distinct variety, from California, producing edible fruit of the size, color and general appearance of the Whortleberry, very desirable for pickling and preserving. 25 cts. per packet.

Also,
THE CELEBRATED NAPOLEON PEAS. The finest dwarf wrinkled marrow variety in cultivation, growing 3 feet high, 75 cts. ½ qt. All of the above by mail on receipt of the amount annexed.

Send for our Vegetable Seed Catalogue.

J. M. Thorburn & Co.,

15 John St., New York.

TENBROOK, PIERCE & CO., Sweet Potato Culturists,

Have on hand a large stock of NANSEMOND and BERMUDA SWEET POTATOES, for Seed, which we offer to those wanting seed the coming spring, at \$13 per bbl. of 3 bushels each. A reasonable discount on large orders and to seed dealers. Our facilities are such, that we can promptly forward ALL ORDERS with which we may be favored. For further particulars, address, TENBROOK, PIERCE & CO. Rockville, Ind., or South Pass, Union Co., Ill. j15f1m1&15

NATIVE WINES.

Norton's Virginia, Concord, Herbemont, Delaware, Cunningham, Cassady, Clinton, Hartford Prolific and Catawba, by the case, containing 1 dozen bottles each. Norton's Virginia, Concord and Catawba, also by the keg, barrel or cask.

As these wines were all grown on my own vineyards, and carefully managed, I can warrant them to be of superior quality and to give general satisfaction.

Sample cases, containing one dozen bottles assorted of all the above varieties, will be put up if desired. Address, GEO. HUSMANN, Hermann, Mo.

CLINTON GRAPES. LINNÆUS RHUBARB. CHERRIES, 1 year old. SEEDLINGS, Roses, &c.

The attention of the trade is especially invited to our

Heavy stock of the above, As well as to our regular assortment of FRUIT AND ORNAMENTAL TREES, SHRUBS, VINES, &c. &c.

Our facilities for shipment to the West are unequalled. Wholesale and Retail Catalogues furnished on application to

Hoopes, Bro., & Thomas,
Cherry Hill Nurseries,
feb4t WEST CHESTER, PA.

TO NURSERYMEN.

Fruit and Flower Plates.

These Plates are all drawn from nature, lithographed by JOSEPH PRESTLE, Sen., and colored by JOSEPH PRESTLE, Jun., from Germany, and are superior to anything of the kind made in Europe.

Samples of

FOUR SPECIMENS sent by mail to any address, post-paid, on receipt of

ONE DOLLAR.

All orders to the amount of

ONE HUNDRED PLATES,

Paid in advance, \$25,

CAN BE SENT BY MAIL.

P.S.—My Plates took the First Premium at the last Iowa State Fair. Send for a Catalogue.

JOSEPH PRESTLE, Jun., Iowa City, Iowa.
feb15—4t

DAHLIAS.

DAHLIAS.

My Descriptive Catalogue of upwards of Two Hundred of the choicest varieties, is now ready, and will be mailed gratis to all applicants. The trade supplied by the hundred or thousand at low rates.

HENRY MICHEL,

With Wm. Koenig & Co., 207 North Second St. St. Louis, Mo.
Feb 15—3t

Flower Seeds by Mail.

10 varieties choice Annuals, \$0.50
25 " " " selected, 1.00
50 " choice Annuals and Biennials, selected, 2.50
100 " choice Annuals, Biennials & Perennials, 5.00
Either of the above packages will be sent free to any address in the United States, on receipt of the price.

HENRY MICHEL,

With Wm. Koenig & Co., 207 North 2d St. St. Louis, Mo.
Feb 15—4t

BLOOMINGTON NURSERY-

275 ACRES—16th Year—General Assortment.

OSAGE ORANGE Hedge Plants—Strong, selected, packed in good order, 10,000 \$25.

APPLE, PEAR, CHERRY—All sizes; beautiful, cheap yearlings, for distant markets.

APPLE ROOT GRAFTS—Ready for planting, 10,000 \$120.

KITATINNY and WILSON'S EARLY Blackberries. GRAPES—Iona, Ives, Israella, Norton's, Concord, Clinton, Hartford, Rogers' Hybrids, &c.

SEEDS—Peach, Pear, Osage Orange. EVERGREENS, SHADE TREES—Immense stock, all sizes.

ALTHEAS—Double named, strong, 100 \$12. ROSES, DAHLIAS—Extra large, fine assortment.

GREENHOUSE and BEDDING PLANTS—8 large houses full.

Send Red Stamp each for 3 Catalogues. feb15—3t F. K. PHOENIX, Bloomington, Ill.

PREMIUM CHESTER COUNTY WHITE

PIGS—Constantly on hand a well selected stock of the purest Breed Chester County Whites. Having paid particular attention to the breeding of these pigs, will guarantee all stock to be of the purest and finest quality. These pigs make more weight for the feed consumed than any other breed, frequently weighing from 5 to 7 hundred pounds from 16 to 18 months old. For sale by GEO. B. HICKMAN, West Chester, Chester Co., Pa. N.B.—Pigs shipped by Express to all parts of the United States at reasonable prices. Decl—6m

NANSEMOND SWEET

POTATOES FOR SEED!



Price \$4 per bushel, \$10 per barrel of three bushels. Also, Plants in proper season. This variety is successfully grown at the North.—Send for Circular of Directions, etc.

MURRAY & CO.,
Foster's Crossings,
mar3t Warren Co., Ohio.

10,000 Norton's Virginia!

Grown from Layers, extra strong.

Also,

CONCORD, CLINTON,

HARTFORD PROLIFIC, &c.

At low rates, by the hundred or thousand. Send for Price List. Address, HENRY MICHEL, 207 North 2d St., St. Louis, Mo. Jan6t

1,000,000 GRAPE VINE CUTTINGS

FOR SALE.

Norton's Virginia, \$12 for 1000 cuttings; by 10,000 or more, only \$10.

Concord and other sorts cheaper.

DR. H. SCHRODER,
Bloomington, Ill.

Yellow Nansemond and Early

Bermuda Sweet Potatoes, \$5 per bushel; \$12 per barrel; St. Louis Red, \$4 per bushel; \$8 per barrel. feb15—4t E. A. RIEHL, Alton, Ill.

Willcox & Gibbs' Sewing Machine.

"Its seam is stronger and less liable to rip in use or wear than the Lock Stitch."
("Judges' Report" at the "Grand Trial.")

Send for the "Report" and samples of Work containing both kinds of stitches on the same piece of goods. Address,
M. W. LEET,

General Agent, No. 11 North Fifth St.,
Saint-Louis, Mo. opposite Court House

PRICE LIST OF WINES,

Grown by

GEORGE HUSMANN, GRAPE HILL VINE-YARDS, NEAR HERMANN, MO.

In cases of one dozen bottles each—

Norton's Virginia, first quality,	\$18.00
Concord, first quality,	12.00
Concord, second quality, very good,	10.00
Herbemont, first quality,	18.00
Delaware, first quality,	24.00
Cunningham, first quality,	18.00
Cassady, first quality,	12.00
Clinton,	10.00
Hartford Prolific,	16.00
Catawba, first quality,	10.00
Catawba, second quality, very fair,	\$ 8.50

In casks, in quantities under forty gallons—

Norton's Virginia, first quality,	\$4.50 per gallon.
Concord, first quality,	3.00 "
Concord, second quality,	2.50 "
Catawba, first quality,	2.50 "
Catawba, second quality,	2.00 "
Herbemont, first quality,	4.50 "

In quantities over forty gallons—

Norton's Virginia, first quality,	4.00 "
Concord, first quality,	2.50 "
Concord, second quality,	2.00 "
Catawba, first quality,	2.00 "
Catawba, second quality,	1.75 "

As these wines were all grown on my own vineyards and carefully managed, I can warrant them to be of superior quality, and have no doubt but they will give general satisfaction. GEO. HUSMANN.

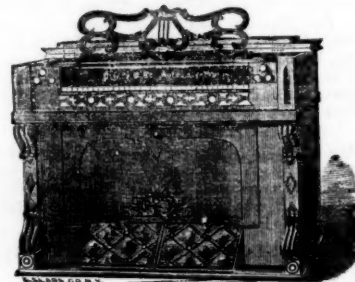
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The oldest establishment in the
United States.

Manufactory, corner of Niagara and Maryland Sts.,
BUFFALO, N.Y.

Over 40,000 Now in Use.

GEO. A. PRINCE & CO.'S
Melodeons and Automatic
Organs.



WITH "MANUAL SUB-BASS" AND "TREMOLLO,"

CAN BE FOUND IN ALL

THE PRINCIPAL MUSIC STORES

Throughout the United States, Canada and the British Provinces. No other musical instrument ever obtained the same popularity.

We now manufacture over FORTY DIFFERENT STYLES of the MELODEON, ORGAN MELODEON, SCHOOL ORGAN, AUTOMATIC ORGAN, &c., and during the existence of our Manufactory have sent forth A GREATER NUMBER OF INSTRUMENTS than the whole of the other Manufactories in the United States combined! And we have the proud satisfaction of adding, WE HAVE NEVER HAD AN INSTRUMENT RETURNED from any imperfections or deficiency in construction.

Our NEW ILLUSTRATED CATALOGUE, just issued, is sent free of postage to any applicant. Address orders or communications to

GEO. A. PRINCE & CO., Buffalo, N.Y., or
GEO. A. PRINCE & CO., Chicago, Ill.

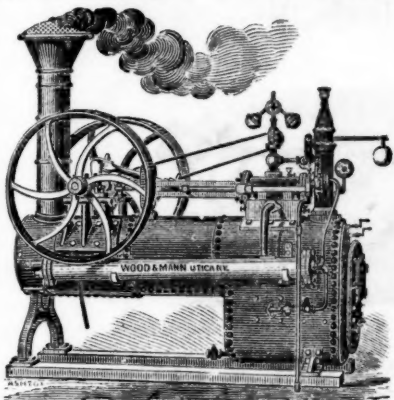
feb15—3m

NURSERY FOR SALE.

The remaining stock and good will of the Hermann Nursery, one of the oldest and most reliable in the State. For further particulars, address

GEO. HUSMANN, Hermann, Mo.

**WOOD & MANN STEAM ENGINE
CO.'S CELEBRATED
PORTABLE AND STATIONARY
Steam Engines & Boilers.**



From 4 to 35 horse power.
Also, PORTABLE SAW MILLS

We have the oldest, largest and most complete works in the United States, devoted exclusively to the manufacture of Portable Engines and Saw Mills, which, for simplicity, compactness, power and economy of fuel, are conceded by experts to be superior to any ever offered to the public.

The great amount of Boiler room, fire surface, and cylinder area, which we give to the rated horse power, make our Engines the most powerful and cheapest in use; and they are adapted to every purpose where power is required. All sizes constantly on hand, or furnished on short notice.

Descriptive Circulars with Price List, sent on application.

WOOD & MANN STEAM ENGINE CO.,
Utica, N. Y.

Branch Office, 96 Maiden Lane, N. Y. City.
July 1-1y

**DR. JACKSON'S
BALSAM OF LUNGWORT.**

The great remedy for Coughs, Colds, Sore Throat, Hoarseness, Spitting of Blood, Soreness of the

**CHEST AND LUNGS,
AND
Consumption.**

This old tried medicine stands higher in reputation than all others; its effects are prompt and certain, and it has cured more bad cases than all other medicines put together. Don't fail to give it a trial, and be convinced, as delays are dangerous.

Price One Dollar a bottle.

COLLINS BROTHERS,
ST. LOUIS, MO.

SOLE PROPRIETORS.

ITCH! ITCH!!

SALT SALT
RHEUM! RHEUM!

Will cure the ITCH or SALT RHEUM.

in a few applications. It also cures prairie Scratches, Chills, Ulcers and all Eruptions of the skin where other remedies have been tried in vain, cures speedily and thoroughly. Price 50 cents a box. Sold by all druggists. By sending 60 cents in a letter to COLLINS BROTHERS, S. W. cor. 2d & Vine streets, St. Louis, Mo., it will be sent by mail free of postage.
April 15-1y.

**The Lamb Family
KNITTING
Machine!**

Knits **H**osiery

OF ALL SIZES,

**Forming the HEEL and
TOE complete,**

Also, FANCY FABRICS of every variety. In fact every article of Knit Fabric in use in the family, can be manufactured on the Machine.

For Circular and SAMPLE STOCKING, address with stamp, CLARK & LEET,
Nov. 15 No. 11 North 5th St., Saint Louis, Mo.

J. M. Jordan's Nursery.

Concord Vines, No. 1, \$15 per 100, \$120 per 1000.

Clinton " " 1, \$10 " \$75 "

Taylor or Bullitt Vines, \$7.50 per 100.

Apple Trees, \$20 per 100.

Peach " \$25 "

Cherry " \$40 "

Dwf. Pear Trees, \$35 per 100.

Stand. Pear, \$40 per 100.

Victoria and Linnaeus Rhubarb, \$10 per 100.

Osage Orange, large plants, \$5 per 1000; small plants, \$3.

Asparagus, Blue Top Giant, strong roots, \$7.50 per 1000.

Send for a Catalogue, or come and see the stock at the Nursery, on Grand Avenue, north of Cass Ave., St. Louis, Mo. J. M. JORDAN

GRAPES!

Grapes, Grapes, Grapes.

300,000 Concord, 100,000 Catawba

From vines never mildewed or rotted.

20,000 Hartford, 10,000 Delaware;

Norton's Virginia, Diana, Clinton

And all other good sorts of Grape Vines.

Current, Raspberry, Strawberry

and other plants, cheaper than anywhere else for sale. Send stamp for Catalogue and Essays on Grape Culture, to DR. H. SCHRODER,

Feb 6t Bloomington, Ill.

2,000 Norton's Virginia Vines, 2d class.

Early Goodrich Potatoes, a few barrels. Feb 15-4t A. RIEHL, Alto, Ill

SMALL FRUIT BOXES.

By the 1000, or 10,000 or 100,000 !!!

I have been appointed SOLE AGENT for the State of Missouri, for the sale of

Hallock's Patent Quart Fruit

Boxes, with Cases for holding the same—furnished complete, in any quantity.

This is the best and cheapest Small Fruit Box yet patented, and can be furnished so cheap that it may go with the fruit, and if not returned the loss will not be felt.

Those having STRAWBERRIES, RASPBERRIES or BLACKBERRIES to market, will do well to correspond with the undersigned.

NORMAN J. COLMAN, St. Louis.

Early Metcalf Strawberry, said

to be 10 days earlier than the Wilson, very productive and firm, sent by mail, at \$1 per dozen; \$5 per 100. Feb 15-4t E. A. RIEHL, Alto, Ill.

PLANT & BRO.,

ST. LOUIS

Agricultural Warehouse

AND

SEED STORE,

(Established 1845, by Wm. M. Plant.)

Sign of the Gilt Plow.

116 & 118 South Main St.,

Between Walnut and Elm:

Also, No. 820 NORTH FOURTH STREET

(Fronting on two streets), & 823 BROADWAY.

Keep the Largest and Best Assortment of

PLOWS, HARROWS,

Corn and Seed Planters and Drills,

Cultivators,

REAPERS, MOWERS,

Horse Rakes,

Horse Powers,

Threshers, Farm Wagons,

Portable Farm Engines,

SAW MILLS,

Leather & Rubber Belting,

Hose, Rubber and Hemp Packing,

Lace Leather,

HOOKS, RIVETS, AND PICKS,

Portable Farm Grist Mills,

PUMPS,

Corn Shellers, Cider Mills,

WHEELBARROWS,

Straw, Hay & Corn Stalk Cutters,

CHURNS, STORE TRUCKS,

Washing Machines,

Clothes Wringers,

Spades, Shovels, Forks, Hoes, &c.

GARDEN, GRASS,

AND OTHER SEEDS,

Cotton Gins, Jennys and Wool

Carding Machines,

McGAFFEY'S COTTON SEED PLANTER

Sorgo Mills & Evaporators.

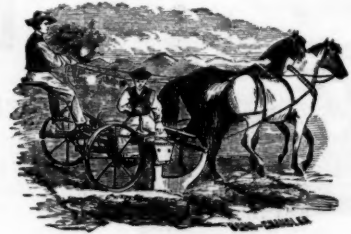
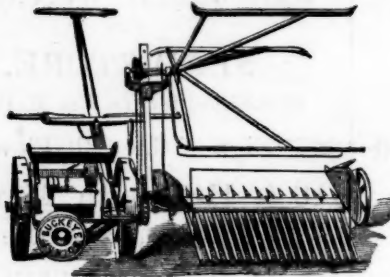
Send for Circulars and Prices.

PLANT & BRO.,

St. Louis, Mo.

WESTERN AGRICULTURAL DEPOT AND SEED STORE.**WM. KOENIG & CO.,**

No. 207, (Old No. 56) North Second St., St. Louis, Mo.



We are just in receipt of a large supply of

LANDRETH'S GARDEN SEEDS,

Now ready for delivery. We are prepared to fill all orders for these celebrated Seeds that we may be favored with; we can assure our patrons that the seeds purchased of us are fresh and true to name. We draw the attention of Farmers to

**BROWN'S IMPROVED ILLINOIS CORN PLANTER.
DEERE'S CELEBRATED MOLINE PLOWS.**

The Favorite Hawkeye Sulky Corn Cultivator.

**The World Renowned BUCKEYE Reaper
And Mower, which took the**

Grand Gold Medal of Honor at the Great Auburn Field Trial as the best machine.

We have also on hand a large supply of

Threshers, Wheat Drills, Corn Shellers, Cutting Boxes, Sugar Mills & Evaporators,
Clover, Timothy, Blue Grass, Red Top and Orchard Grass Seeds, &c.

Descriptive Circulars sent gratis on application.

WM. KOENIG & CO., 207 North 2d St., St. Louis, Mo.**BARNUM & BROTHER, No. 25 South Main St., Saint Louis, Mo.,** Call attention to the fact
THAT THEY ARE NOW PREPARED TO FURNISH**LANDRETH'S CELEBRATED GARDEN SEEDS,**

The reputation of these Garden Seeds is established, and the purchaser can rely with reasonable certainty on being supplied with what our label indicates—FRESH AND GENUINE SEEDS.

Also Agents for

Straub's Wheat Flouring, Corn Meal & Feed, Portable Queen of the South**GRIST MILLS,**

5000 of which are now in use West and South.

We have also the exclusive sale in this market of

WAY'S HAY, HEMP AND COTTON PRESS.

AGENTS FOR THE

**CHAMPION COMBINED REAPER
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Which took the First Premium at the Missouri State Fair, 1866.

Also, for Vandiver's Mo. Corn Planter,

Which took the First Premium.

Straub's Grist Mill, which took First Premium.**ALLEN'S COTTON PLANTER.****BUCKEYE SULKY CORN PLOW.****BRANSON'S HAND LOOM, AND CELEBRATED ROCK
ISLAND STEEL PLOWS.**

Also, prepared to supply

Pitt's Threshers, Avery & Calhoun Plows, Corn Shellers, Cutting Boxes,Leather and Rubber Belting, Drag Saws, Horse Powers, Champion and Putnam Wringers, Missouri Family Washing Machine, and all kinds
of the most approved patterns of implements and machines.